



July 2014





MID-COAST CORRIDOR

TRANSIT PROJECT

Supplemental Environmental Impact Statement/
Supplement to the Subsequent Environmental Impact Report
July 2014

Prepared by:
The San Diego Association of Governments (SANDAG)



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Mid-Coast Corridor Transit Project San Diego, California

SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

PREPARED PURSUANT TO:

National Environmental Policy Act of 1969, §102 (42 United States Code [USC] §4332 et seq.), 40 Code of Federal Regulations (CFR) §1502.9, 23 CFR §771.130, Endangered Species Act of 1973, as amended, 16 USC §1531 et seq., and 50 CFR §402.06.

The Federal Transit Administration may issue a single Final Supplemental Environmental Impact Statement and Record of Decision document pursuant to Pub. L. 112-141, 126 Stat. 405, Section 1319(b) unless the Federal Transit Administration determines statutory criteria or practicability considerations preclude issuance of the combined document pursuant to Section 1319. In that case, Federal Transit Administration would issue a Final Supplemental Impact Statement followed by a Record of Decision, as needed.

by the

FEDERAL TRANSIT ADMINISTRATION
U.S. DEPARTMENT OF TRANSPORTATION

and the

SAN DIEGO ASSOCIATION OF GOVERNMENTS



Leslie T. Rogers
Regional Administrator, Region IX
Federal Transit Administration

JUL 3 2014

Date of Approval



Gary Gallegos
Executive Director
San Diego Association of Governments

7-3-2014

Date of Approval



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ABSTRACT

The Federal Transit Administration and the San Diego Association of Governments (SANDAG) have prepared this Supplemental Environmental Impact Statement for the Mid-Coast Corridor Transit Project in San Diego, San Diego County, California. Pursuant to 23 Code of Federal Regulations 771.130, this document was prepared to supplement the *Mid-Coast Corridor Transit Project Draft Supplemental Environmental Impact Statement* (SEIS) (SANDAG, 2013a), which was circulated for review and comment from May 17, 2013 to July 17, 2013. This document provides for review and comment of an impact that was not evaluated in the Draft SEIS. This is a limited-scope document that evaluates a previously unidentified impact to San Diego fairy shrimp (*Branchinecta sandiegonensis*), a federally listed endangered species, and discusses the proposed mitigation.

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This document is being made available to the public for a 45-day comment period in accordance with the National Environmental Policy Act. Comments during this review period must be limited to the analysis of impacts to the San Diego fairy shrimp as presented in this document only.

Visit the Mid-Coast Corridor Transit Project website (www.sandag.org/midcoast) where you can view and download this document and the Draft SEIS and request a compact disc of the documents. Printed copies of the documents are available for review and purchase at the SANDAG offices at the address listed above; compact discs are available free of purchase.

Printed copies of this document have been placed for review in the following public libraries: Balboa Branch Library; City of San Diego Central Library; Clairemont Branch Library; Kensington-Normal Heights Branch Library; La Jolla/Riford Branch Library; Linda Vista Branch Library; Mesa College Library; Mission Hills Branch Library; Mission Valley Branch Library; North Clairemont Branch Library; North Park Branch Library; North University Community Branch Library; Ocean Beach Branch Library; Pacific Beach/Taylor Branch Library; Point Loma/Hervey Branch Library; San Diego County Public Law Library; Serra Mesa-Kearny Mesa Branch Library; University Community Branch Library; University Heights Branch Library; University of California, San Diego Geisel Library; and University of San Diego Copley Library.

Comments may be submitted in writing during the 45-day comment period. Written comments should be submitted to Ms. Leslie Blanda, Mid-Coast Project Development Program Manager, at the address above or submitted via e-mail at midcoast@sandag.org. Responses to comments received on this document will be included in the Final SEIS for the project.



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SUPPLEMENT TO THE MID-COAST CORRIDOR TRANSIT PROJECT DRAFT SUBSEQUENT ENVIRONMENTAL IMPACT REPORT

LEAD AGENCY: San Diego Association of Governments

STATE CLEARINGHOUSE NO.: 2010051001

TITLE OF PROPOSED ACTION: Mid-Coast Corridor Transit Project

ABSTRACT:

The San Diego Association of Governments (SANDAG) has prepared this supplement for the Mid-Coast Corridor Transit Project in San Diego, San Diego County, California. This document was prepared to supplement the *Mid-Coast Corridor Transit Project Draft Subsequent Environmental Impact Report* (Draft SEIR) (SANDAG, 2013a), which was circulated for public review from May 17, 2013 to July 17, 2013. This document provides for review and comment of an impact that was not evaluated in the Draft SEIR. This is a limited-scope document that evaluates a previously unidentified potentially significant impact to San Diego fairy shrimp (*Branchinecta sandiegonensis*), a federally listed endangered species, and discusses proposed mitigation.

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This document is available for a 45-day comment period in accordance with the California Environmental Quality Act. Comments during this review period must be limited to the analysis of impacts to the San Diego fairy shrimp as presented in this document only.

Visit the Mid-Coast Corridor Transit Project website (www.sandag.org/midcoast) where you can view and download this document and the Draft SEIR and request a compact disc of the documents. Printed copies of this document are available for review and purchase at the SANDAG offices at the address listed above; compact discs are available free of purchase.

Printed copies of this document have been placed for review in the following public libraries: Balboa Branch Library; City of San Diego Central Library; Clairemont Branch Library; Kensington-Normal Heights Branch Library; La Jolla/Riford Branch Library; Linda Vista Branch Library; Mesa College Library; Mission Hills Branch Library; Mission Valley Branch Library; North Clairemont Branch Library; North Park Branch Library; North University Community Branch Library; Ocean Beach Branch Library; Pacific Beach/Taylor Branch Library; Point Loma/Hervey Branch Library; San Diego County Public Law Library; Serra Mesa-Kearny Mesa Branch Library; University Community Branch Library; University Heights Branch Library; University of California, San Diego Geisel Library; and University of San Diego Copley Library.



Comments may be submitted in writing during the 45-day comment period. Written comments should be submitted to Ms. Leslie Blanda, Mid-Coast Project Development Program Manager, at the address above or submitted via e-mail at midcoast@sandag.org. Responses to comments received on this document will be included in the Final SEIR for the project.



Table of Contents

S.0	EXECUTIVE SUMMARY	S-1
1.0	INTRODUCTION.....	1-1
1.1	Background	1-1
1.2	Purpose and Scope of this Document.....	1-1
1.3	Environmental Review Process.....	1-2
1.4	Next Steps.....	1-2
2.0	PURPOSE AND NEED	2-1
3.0	ALTERNATIVES CONSIDERED.....	3-1
3.1	No-Build Alternative.....	3-1
3.2	Build Alternative	3-1
3.3	Refined Build Alternative	3-3
3.3.1	Addition of Veterans Administration Medical Center Station Option.....	3-6
3.3.2	Elimination of the Genesee Avenue Design Option.....	3-6
3.3.3	Refinements to LRT Alignment.....	3-6
3.3.4	Refinements to Stations.....	3-7
3.3.5	Refinements to Traction Power Substations.....	3-8
3.3.6	Refinements to Construction Staging Areas.....	3-8
3.3.7	Other Engineering Refinements	3-9
4.0	ENVIRONMENTAL ANALYSIS, CONSEQUENCES, AND MITIGATION	4-1
4.1	Surveys and Impact Assessment	4-1
4.1.1	Surveys.....	4-1
4.1.2	Impacts Assessment.....	4-4
4.2	Affected Environment	4-6
4.2.1	Study Area and Surrounding Land Uses	4-6
4.2.2	Soils	4-9
4.2.3	Drainages/Hydrology	4-11
4.2.4	Vegetation Communities and Land Covers	4-11
4.2.5	San Diego Fairy Shrimp.....	4-15
4.3	Environmental Impacts, Avoidance Analysis, and Mitigation	4-15
4.3.1	No-Build Alternative	4-15
4.3.2	Refined Build Alternative	4-15
4.3.3	Mitigation Measures.....	4-19
5.0	CALIFORNIA ENVIRONMENTAL QUALITY ACT DETERMINATION.....	5-1
6.0	CUMULATIVE IMPACTS	6-1
6.1.1	No-Build Alternative	6-1
6.1.2	Refined Build Alternative	6-1
7.0	REFERENCES.....	7-1
8.0	LIST OF PREPARERS	8-1

List of Appendices

APPENDIX A	AGENCY CORRESPONDENCE	A-1
APPENDIX B	SECTION 7 CONSULTATION BIOLOGICAL ASSESSMENT	B-1
APPENDIX C	USFWS NOTIFICATION CORRESPONDENCE	C-1

List of Figures

Figure 3-1.	No-Build Alternative Transportation Improvements.....	3-2
Figure 3-2.	Build Alternative	3-4
Figure 3-3.	Refined Build Alternative	3-5
Figure 4-1.	Fairy Shrimp Survey Area	4-2
Figure 4-2.	Affected Environment	4-7
Figure 4-3.	Basin II Inundated	4-8
Figure 4-4.	Basin II Dry.....	4-9
Figure 4-5.	Soils Map.....	4-10
Figure 4-6.	Basin II Hydrology	4-13
Figure 4-7.	San Diego Fairy Shrimp	4-15
Figure 4-8.	Refined Build Alternative at Basin II	4-16
Figure 4-9.	Avoidance Design at Basin II	4-17

List of Tables

Table 4-1.	2013-2014 Schedule of Surveys	4-3
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Abbreviations

The following acronyms, initialisms, and short forms are used in this report.

2030 RTP	<i>2030 San Diego Regional Transportation Plan: Pathways for the Future</i>
BMPs	Best Management Practices
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
EIS	Environmental Impact Statement
EMI	Electromagnetic Interference
ESA	Endangered Species Act
FTA	Federal Transit Administration
I-	Interstate
LOSSAN	Los Angeles—San Diego—San Luis Obispo Rail Corridor Agency
LRT	light rail transit
MSCP	Multiple Species Conservation Program
MTS	Metropolitan Transit System
OTTC	Old Town Transit Center
ROD	Record of Decision
SANDAG	San Diego Association of Governments
Scripps Hospital	Scripps Memorial Hospital, La Jolla
SEIS/SEIR	Supplemental Environmental Impact Statement and Subsequent Environmental Impact Report
Supplement	Supplemental Environmental Impact Statement/Supplement to the Subsequent Environmental Impact Report
TPSSs	traction power substations
Trolley	San Diego Trolley
UCSD	University of California, San Diego
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
UTC	University Towne Centre
VA	Veterans Administration



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S.0 EXECUTIVE SUMMARY

The Federal Transit Administration (FTA) and the San Diego Association of Governments (SANDAG) have prepared this Supplemental Environmental Impact Statement/Supplement to the Subsequent Environmental Impact Report (Supplement) for the Mid-Coast Corridor Transit Project in San Diego, California. Pursuant to Title 23 of the Code of Federal Regulations, Section 771.120, and the California Code of Regulations, Title 14, Chapter 3, Section 15088.5, this document was prepared to supplement the *Mid-Coast Corridor Transit Project Draft Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report* (SEIS/SEIR) (SANDAG 2013a), which was circulated for review and comment from May 17, 2013 to July 17, 2013. This is a limited-scope document that evaluates a previously unidentified impact to San Diego fairy shrimp (*Branchinecta sandiegonensis*), a federally listed endangered species protected pursuant to the federal Endangered Species Act (ESA), and discusses the proposed mitigation.

The scope of this Supplement is limited to the evaluation of direct, indirect, and cumulative impacts to San Diego fairy shrimp; the discussion of formal Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) pursuant to the ESA; and the identification of mitigation measures. Potential impacts to the San Diego fairy shrimp are described for a No-Build Alternative and the Refined Build Alternative. The Refined Build Alternative was approved by the SANDAG Board of Directors on November 15, 2013, and amended by the Board of Directors on May 9, 2014, for evaluation in the Final SEIS/SEIR. The Refined Build Alternative is described in the *Mid-Coast Corridor Transit Project Final Refined Build Alternative Report* (SANDAG, 2014). The project alignment under the Refined Build Alternative at the location of the potential impacts to the San Diego fairy shrimp is the same as the Build Alternative evaluated in the Draft SEIS/SEIR. The No-Build Alternative in this Supplement also is the same as that presented in the Draft SEIS/SEIR.

San Diego fairy shrimp were identified as present within an ephemeral basin (referred to as Basin II), which is approximately 76 feet long and 5.5 feet wide (approximately 425 square feet). Direct impacts would occur to the basin and San Diego fairy shrimp as a result of grading and filling activities associated with at-grade track construction to accommodate the new San Diego Trolley tracks. Impacts to ephemeral basins occupied by San Diego fairy shrimp, such as Basin II, are proposed to be mitigated at a 2:1 ratio through restoration and/or enhancement of vernal pools within west Otay Mesa on property purchased for vernal pool mitigation or within another approved mitigation area acceptable to the USFWS. Restoration would be conducted at a minimum 1:1 ratio to achieve a no-net-loss of San Diego fairy shrimp habitat; a combination of restoration and enhancement would make up the remaining mitigation.

Formal consultation with the USFWS under Section 7 of the ESA was initiated by the FTA and SANDAG on June 12, 2014. Documentation of correspondence with the USFWS regarding San Diego fairy shrimp is provided in Appendix A. The *Mid-Coast Corridor Transit Project Section 7 Consultation Biological Assessment* is provided in Appendix B.



This Supplement will be available for a 45-day review and comment period prior to the issuance of a combined Final SEIS and Record of Decision (ROD) by FTA, and prior to certification of the Final SEIR by SANDAG. Any comments on this Supplement should be limited to the scope of analysis of this document. Responses to comments received on this Supplement will be provided with the Final SEIS/SEIR for the project. SANDAG, in coordination with the FTA, will complete the Final SEIS/SEIR and associated documents. The FTA will continue Section 7 consultation with the USFWS, which will conclude with the USFWS issuing a Biological Opinion. The FTA may issue a single Final SEIS and ROD pursuant to Public Law 112-141, 126 Statute 405, Section 1319(b) unless the FTA determines statutory criteria or practicability considerations preclude issuance of the combined document pursuant to Section 1319. In that case, FTA would issue a Final SEIS followed by the ROD.

1.0 INTRODUCTION

1.1 Background

This Supplemental Environmental Impact Statement/Supplement to the Subsequent Environmental Impact Report, referred to herein as the Supplement, has been prepared by the San Diego Association of Governments (SANDAG), in cooperation with the Federal Transit Administration (FTA), for the Mid-Coast Corridor Transit Project in San Diego, San Diego County, California. The proposed project would extend the San Diego Trolley Blue Line from the Santa Fe Depot in Downtown San Diego to the University Towne Centre Transit Center in University City, providing continuous service from the San Ysidro Transit Center at the U.S.–Mexico international border to University City. SANDAG is serving as lead agency under the California Environmental Quality Act (CEQA), and the FTA the lead agency under the National Environmental Policy Act. The *Mid-Coast Corridor Transit Project Draft Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report* (SEIS/SEIR) (SANDAG, 2013a) for the project was completed and distributed for a 60-day review and comment period from May 17 through July 17, 2013.

On November 15, 2013, the SANDAG Board of Directors approved the Refined Build Alternative for evaluation in the Final SEIS/SEIR. The development of the Refined Build Alternative is described in the *Mid-Coast Corridor Transit Project Final Refined Build Alternative Report* (SANDAG, 2014). Refinements were developed based on consideration of a summary of the comments received on the Draft SEIS/SEIR, additional coordination with agencies and stakeholders, and further evaluation of the project design. All refinements were either beneficial (i.e., impacts are reduced or eliminated) or impact-neutral (i.e., no new impacts would occur or no previously identified impacts would become more severe). The Refined Build Alternative approved by the SANDAG Board of Directors on November 15, 2013, was amended by the SANDAG Board of Directors on May 9, 2014, to retain the Interstate 5 crossing south of Nobel Drive at the location in the Build Alternative as evaluated in the Draft SEIS/SEIR.

1.2 Purpose and Scope of this Document

The FTA's "Environmental Impact and Related Procedures" (23 Code of Federal Regulations [CFR] part 771) regulation prescribes the policies and procedures of the FTA for implementing the National Environmental Policy Act of 1969. This regulation states (Section 771.130, Supplemental environmental impact statements) that a draft Environmental Impact Statement (EIS), final EIS, or SEIS may be supplemented at any time. An EIS will be supplemented whenever the FTA determines that changes to the proposed action would result in specific environmental impacts that were not evaluated in the EIS or that new information or circumstances relevant to environmental concerns and bearing on the proposed action or its impacts would result in significant environmental impacts not evaluated in the EIS. Consistent with 23 CFR 771.130(f), this Supplement addresses issues of limited scope, such as the extent of proposed mitigation for a limited portion of the overall project.

Guidelines for the implementation of CEQA are provided in the State CEQA Guidelines in the California Code of Regulations, Title 14, Chapter 3, Sections 15000 et seq. CEQA



Guidelines Section 15088.5, subdivision (a) provides that “[a] lead agency is required to recirculate an EIR when significant new information is added to the EIR after...public review ...but before certification....Examples of “significant new information” requiring recirculation include a “new significant environmental impact” or a “substantial increase in the severity of an environmental impact.” “If the revision is limited to a few chapters or portions of the EIR, the lead agency need only recirculate the chapters or portions that have been modified” and “may request that reviewers limit their comments to the revised chapters or portions of the recirculated EIR” (Section 15088.5, subdivisions (c) and (f)(2)).

This Supplement is a limited-scope document that evaluates a previously unidentified impact to San Diego fairy shrimp (*Branchinecta sandiegonensis*), a federally listed endangered species, and discusses the proposed mitigation. It supplements Chapter 4.0, Sections 4.8, 4.17, and 4.19 of the *Mid-Coast Corridor Transit Project Draft SEIS/SEIR* (SANDAG, 2013a) as well as Sections 4.7, 5.1.2, 5.2.2, 5.3.2, 6.2, 7.1.1, 7.2.2, and 7.3.1 of the *Mid-Coast Corridor Transit Project Biological Resources Technical Report* (SANDAG, 2013b) and Sections 5.7, 6.6, and 7.2 of the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2013c) (these reports are available on the project website at www.sandag.org/midcoast). This document provides for review and comment of an impact that was not evaluated in the Draft SEIS/SEIR. Impacts to this federally listed endangered species require consultation with the U.S. Fish and Wildlife Service (USFWS) pursuant to Section 7 of the federal Endangered Species Act.

Potential impacts to the San Diego fairy shrimp are described for a No-Build Alternative and the Refined Build Alternative that was approved by the SANDAG Board of Directors on November 15, 2013 (and amended on May 9, 2014) for evaluation in the Final SEIS/SEIR. The Refined Build Alternative is described in the *Mid-Coast Corridor Transit Project Final Refined Build Alternative Report* (SANDAG, 2014). The project alignment under the Refined Build Alternative at the location of the potential impacts to the San Diego fairy shrimp is the same as the Build Alternative evaluated in the Draft SEIS/SEIR. The No-Build Alternative in this Supplement also is the same as that presented in the Draft SEIS/SEIR.

1.3 Environmental Review Process

This Supplement is being made available for a 45-day review and comment period. Comments should be limited to the analysis contained in this Supplement only. Responses to comments received on this Supplement will be provided with the Final SEIS/SEIR for the project.

1.4 Next Steps

SANDAG, in coordination with the FTA, will prepare responses to comments received on this Supplement and complete the Final SEIS/SEIR and associated documents. The FTA will continue Section 7 consultation with the USFWS, which will conclude with the USFWS issuing a Biological Opinion. FTA will issue a Notice of Availability of the Final SEIS in the *Federal Register*. SANDAG will submit a Notice of Completion of the Final SEIR to the State Clearinghouse and will hold a public hearing to certify the document.



The FTA may issue a single Final SEIS and Record of Decision pursuant to Public Law 112-141, 126 Statute 405, Section 1319(b) unless the FTA determines statutory criteria or practicability considerations preclude issuance of the combined document pursuant to Section 1319. In that case, FTA would issue a Final SEIS followed by the Record of Decision.



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2.0 PURPOSE AND NEED

The Purpose and Need for the Mid-Coast Corridor Transit Project is presented in Chapter 1.0 of the *Mid-Coast Corridor Transit Project Draft Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report* (SANDAG, 2013a). As stated in that chapter, the purpose of the proposed project is to provide for the implementation of transit improvements that improve transit service in the Mid-Coast Corridor between Downtown San Diego, Old Town, and University City. Although the Mid-Coast Corridor is currently served by transit, the existing transit system does not offer the level of service needed to meet the region's goals for mobility, accessibility, reliability, and efficiency, as defined in the *2030 San Diego Regional Transportation Plan: Pathways for the Future* (SANDAG, 2007). The COASTER commuter rail service passes through the corridor, but its stations are widely spaced and it does not have a station in close proximity to the University of California, San Diego or University Towne Centre. The existing San Diego Trolley (Trolley) Blue Line currently terminates at the Old Town Transit Center. While transit mobility and accessibility to northern portions of the corridor are provided by express and local buses, the speed and reliability of bus service are constrained by roadway congestion, and many transit riders are required to transfer in Downtown San Diego or at the Old Town Transit Center to reach destinations in University City. With congestion projected to increase in the future, the level of service, reliability, and efficiency of the transit system will all decrease.

To meet the region's goals most effectively, the Mid-Coast Corridor needs a transit system that is better able to serve the major travel destinations of the University of California, San Diego and the University Towne Centre Transit Center in University City. This transit system must provide a frequency of service, speed, and reliability that would better serve existing transit riders and attract new riders. The project, which extends the Trolley Blue Line north and connects with the other Trolley lines using an exclusive right-of-way for transit, would shorten travel times, improve reliability, and reduce the number of transfers required for travel to destinations in University City. This would improve service for existing riders and attract new riders. In addition, one-seat rides (trips that do not require a transfer) would be available from the U.S.–Mexico international border to University City, and between communities in South San Diego County, Downtown San Diego, and University City, making transit an attractive alternative to travel by automobile.



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3.0 ALTERNATIVES CONSIDERED

Chapter 2.0 of the *Mid-Coast Corridor Transit Project Draft Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report* (SEIS/SEIR) (San Diego Association of Governments [SANDAG], 2013a) documents the development of alternatives and the description of the No-Build Alternative and the Build Alternative that were evaluated in the Draft SEIS/SEIR. This section provides a summary of the No-Build and Build Alternatives. Additionally, this section describes the Refined Build Alternative, which reflects refinements made to the Build Alternative subsequent to the Draft SEIS/SEIR comment period. The Refined Build Alternative was approved by the SANDAG Board of Directors on November 15, 2013, for evaluation in the Final SEIS/SEIR and was amended on May 9, 2014.

3.1 No-Build Alternative

The No-Build Alternative is evaluated in the context of the existing transportation facilities and services in the Mid-Coast Corridor (as characterized in 2010) and other future facilities and services identified in the Revenue Constrained Scenario of the 2030 Regional Transportation Plan (2030 RTP) (SANDAG, 2007). Figure 3-1 identifies the location of the major transportation projects included in the 2030 RTP within the Mid-Coast Corridor and assumed to exist in the No-Build Alternative. The No-Build Alternative also assumes other San Diego Trolley (Trolley) system improvements, including 7.5-minute service frequencies during peak (i.e., 6:00 to 9:00 a.m. and 3:00 to 6:00 p.m.) and off-peak midday (i.e., 9:00 a.m. to 3:00 p.m.) periods on the Trolley Blue Line.

Because the No-Build Alternative provides the background transportation network against which the Build Alternative's impacts are identified and evaluated, the No-Build Alternative excludes the Mid-Coast Corridor Transit Project but does include continuation and enhancement of bus Route 150 (as show in Figure 3-1) that is planned for elimination in the 2030 RTP when the Mid-Coast Corridor Transit Project becomes operational. The route would operate in the proposed high-occupancy vehicle lanes on Interstate (I-) 5 from the Old Town Transit Center (OTTC) north to Nobel Drive.

3.2 Build Alternative

The Build Alternative evaluated in the Draft SEIS/SEIS would extend the Trolley Blue Line from Santa Fe Depot in Downtown San Diego to the University Towne Centre (UTC) Transit Center in University City. The project would use the existing Trolley tracks for approximately 3.5 miles, from the Santa Fe Depot to north of the OTTC and south of the San Diego River. The Trolley Blue Line trains would share the existing tracks with the Trolley Green Line trains. The project also would include construction of 10.9 miles of new double track that would extend from south of the San Diego River to the terminus at the UTC Transit Center.



Figure 3-1. No-Build Alternative Transportation Improvements



Source: SANDAG, 2012

The new extension would follow the Los Angeles–San Diego–San Luis Obispo (LOSSAN) tracks within existing Metropolitan Transit System and City of San Diego right-of-way from the Santa Fe Depot to north of the I-5/State Route 52 interchange. The alignment would then leave the LOSSAN right-of-way and parallel the east side of the I-5 corridor traveling north partially within California Department of Transportation right-of-way and partially on private property. South of Nobel Drive, the alignment would transition to an aerial structure and cross over to the west side of I-5. From Nobel Drive, the alignment would continue north along the west side of I-5 to the University of California, San Diego (UCSD) West Campus, cross back over to the east side of I-5, and proceed along Voigt Drive to Genesee Avenue, and then south in the median of Genesee Avenue to the UTC Transit Center.

The Build Alternative included 8 new stations (3 at grade and 5 elevated); 5 park-and-ride facilities with 1,070 parking spaces; 14 new and 4 upgraded traction power substations (TPSSs); and 36 new low-floor light rail transit (LRT) vehicles. No new maintenance facilities would be needed. New stations would be located at Tecolote Road, Clairemont Drive, Balboa Avenue, Nobel Drive, UCSD West, UCSD East, Executive Drive, and the UTC Transit Center.

The Build Alternative included two options—one provided for an optional at-grade station at the Veterans Administration (VA) Medical Center and the other provided for an alternative design for the proposed Genesee Avenue aerial alignment in University City. Figure 3-2 shows the project alignment and station locations, as well as the VA Medical Center Station Option and the Genesee Avenue Design Option.

With the extension of the Trolley Blue Line, continuous service would be provided from the San Ysidro Transit Center at the U.S.–Mexico international border to University City. The service would be provided every 7.5 minutes during peak and off-peak periods in 2030.

3.3 Refined Build Alternative

Refinements were proposed to the Build Alternative based on comments received on the Draft SEIS/SEIR, additional analysis of impacts identified in the Draft SEIS/SEIR, and coordination with agencies and stakeholders. The proposed refinements included the addition of the VA Medical Center Station; refinements to the LRT alignment, stations, TPSSs, and construction staging areas; and further engineering refinements. The Genesee Avenue Design Option was proposed to be eliminated from further consideration. These refinements are discussed in the following sections.

The Refined Build Alternative was approved by the SANDAG Board of Directors on November 15, 2013, and amended on May 9, 2014. The Refined Build Alternative would include 9 new stations (4 at grade and 5 elevated); 5 park-and-ride facilities with 1,170 parking spaces; 14 new and 2 upgraded TPSSs; and 36 new low-floor LRT vehicles. Figure 3-3 shows the project alignment and station locations.



Figure 3-2. Build Alternative



Source: SANDAG, 2012



Figure 3-3. Refined Build Alternative



Source: SANDAG, 2014



3.3.1 Addition of Veterans Administration Medical Center Station Option

The option for an additional station at the VA Medical Center was evaluated in the Draft SEIS/SEIR. Inclusion of this station in the Refined Build Alternative was recommended based on station ridership, improved access to hospital and medical facilities, and favorable public comment. No adverse or significant environmental impacts were identified for the VA Medical Center Station in the Draft SEIS/SEIR. The VA Medical Center Station is included in the Refined Build Alternative approved by the SANDAG Board of Directors on November 15, 2013.

3.3.2 Elimination of the Genesee Avenue Design Option

The option for incorporating straddle bents in place of center columns to support the aerial structure along Genesee Avenue west of Regents Road was developed and evaluated for the purpose of reducing right-of-way acquisitions. As stated in the Draft SEIS/SEIR, the option would result in significant and unavoidable visual impacts along Genesee Avenue, would adversely affect the character of the community, and would not result in a substantial reduction in property acquisition. Elimination of the Genesee Avenue Design Option reduces visual and community character impacts and addresses public comments opposing the use of straddle bents. The Genesee Avenue Design Option is excluded from the Refined Build Alternative approved by the SANDAG Board of Directors on November 15, 2013.

3.3.3 Refinements to LRT Alignment

The refinements to the LRT alignment under the Build Alternative include changes to the design of the crossing of I-5 south of Nobel Drive and a shift in the Voigt Drive alignment in the vicinity of Scripps Memorial Hospital La Jolla (Scripps Hospital), west of I-5.

- **I-5 Crossing South of Nobel Drive**—The Build Alternative in the Draft SEIS/SEIR included straddle bents to support the aerial structure over the northbound and southbound lanes on I-5. A refinement to the Build Alternative was developed that improves the visual aesthetics of the aerial structure through the elimination of the straddle bents. Several comments on the Draft SEIS/SEIR expressed opposition to the use of straddle bents along the alignment. The elimination of the straddle bents at the I-5 crossing improves aesthetics and is included in the Refined Build Alternative.
- **Voigt Drive Alignment**—Under the Build Alternative in the Draft SEIS/SEIR, the LRT alignment in the vicinity of Scripps Hospital would be located on the north side of Voigt Drive. Comments from Scripps Hospital on the Draft SEIS/SEIR identified the location of sensitive medical equipment that could be susceptible to vibration and electromagnetic interference (EMI) in the XiMed medical office building located on the south side of the hospital campus, which is closest to the alignment. The comments requested that an alignment south of Voigt Drive, away from the XiMed building, be considered and evaluated. Further analysis of electromagnetic field impacts on the XiMed building determined that the project could affect the equipment located in the XiMed building even with the proposed mitigation at the source evaluated in the Draft SEIS/SEIR. Based on these findings and the comments from Scripps Hospital, a refinement to the Build Alternative was developed that shifts the

LRT alignment to the south side of Voigt Drive. With this shift, the project-related EMI at the XiMed building would be substantially reduced to the extent that mitigation of electromagnetic fields at the source (i.e., through design of the project) would be sufficient to avoid adverse effects to sensitive medical equipment. The refinement to the Voigt Drive alignment was reviewed with UCSD and Scripps Hospital, and is included in the Refined Build Alternative.

3.3.4 Refinements to Stations

The refinements to stations include changes to the configuration of the Clairemont Drive Station park-and-ride lot and removal of the pedestrian ramps, reconfiguration of the parking structure at the Nobel Drive Station, relocation of the UCSD East Station to accommodate the change in alignment on Voigt Drive, and acquisition of parking spaces at the UTC Transit Center instead of construction of a parking structure for transit patrons. The stations at Tecolote Road, Balboa Avenue, UCSD West, and Executive Drive as defined in the Draft SEIS/SEIR are included in the Refined Build Alternative without substantial changes. No comments were received that would affect the UCSD West Station or the Executive Drive Station.

- **Clairemont Drive Station**—Under the Build Alternative in the Draft SEIS/SEIR, bus transfers at the Clairemont Drive Station would be accommodated by on-street bus stops on Clairemont Drive east of Morena Boulevard. Pedestrian ramps were provided for access to the station from Clairemont Drive to Morena Boulevard. Comments on the Draft SEIS/SEIR noted that the on-street bus stops on Clairemont Drive would be inconvenient for passengers transferring to and from the Trolley. The refinement to the Clairemont Drive Station included in the Refined Build Alternative provides for bus transfers within the Clairemont Drive Station parking lot. The relocation of the bus transfer location eliminates the need for pedestrian ramps from Clairemont Drive to Morena Boulevard and makes transfers between a bus and Trolley more convenient. Transit passengers transferring between a bus and the Trolley would be able to cross Morena Boulevard at the existing signalized crosswalk at Ingulf Street located at the southern end of the station platform.
- **Nobel Drive Station**—Under the Build Alternative in the Draft SEIS/SEIR, the Nobel Drive Station provided for a 600-space joint-use parking structure to be constructed at the La Jolla Village Square shopping center. Coordination with the property owner and further engineering refinements resulted in a change in the layout of the parking structure, which would include replacement parking spaces and 260 transit parking spaces. The existing surface parking lot also would be reconfigured with construction of the parking structure. These modifications do not result in new or increased impacts.
- **UCSD East Station**—A refinement to the location of the UCSD East Station was necessary to accommodate the shift in the LRT alignment to the UCSD campus on the south side of Voigt Drive to avoid potential EMI impacts. With the shift in the LRT alignment, the station was relocated to the east to accommodate the alignment and avoid conflict with the planned future UCSD track and field facility. The station location would accommodate the planned realignment of Campus Point Drive. The refinement does not result in new or increased impacts.

- UTC Transit Center—The UTC Transit Center platform would be located in the center of Genesee Avenue, south of Esplanade Court/UTC Driveway. Under the Build Alternative in the Draft SEIS/SEIR, the station was proposed to include 260 transit parking spaces in a joint-use parking structure at the Westfield UTC shopping center. The parking structure would be constructed by Westfield as part of the planned expansion of the shopping center. The transit parking spaces would be constructed as an additional level on the parking structure. Comments received on the Draft SEIS/SEIR indicated concerns regarding the timing of the parking structure construction by Westfield and commitment of funds by SANDAG. Design of the shopping center parking structure is currently underway, with construction scheduled to begin in mid-2014, prior to the scheduled date of the Record of Decision for the project. Because SANDAG cannot commit funds for construction prior to the Record of Decision, the 260 transit parking spaces would be provided by acquisition of parking spaces from the Westfield UTC shopping center. This change does not result in new or increased impacts.

3.3.5 Refinements to Traction Power Substations

The Build Alternative presented in the Draft SEIS/SEIR was anticipated to require 18 TPSSs, including 3 replacement substations on existing sites between Santa Fe Depot and the OTTC and 15 new substations. Refinements to the number and location of the TPSSs were made based on the results of a load-flow analysis, which analyzed the power distribution system required for operation of the LRT system.

The load-flow analysis identified a requirement for 16 TPSSs, 2 fewer than the Build Alternative presented in the Draft SEIS/SEIR. The TPSSs proposed at the OTTC and on Anna Street north of the San Diego River were determined to be unnecessary based on the results of the load-flow analysis. Other refinements to the TPSS locations include the following:

- Relocation of the substation at the Wright Street Yard to the south within the Metropolitan Transit System property
- Relocation of the substation at Baker Street to the Clairemont Drive Station parking lot
- Relocation of the substation within the City Yard site north of Balboa Avenue
- Relocation of the substation on Charmant Drive to the west side of I-5 within the California Department of Transportation right-of-way at the southern end of the La Jolla Village Square shopping center property
- Relocation of the substation on Voigt Drive from north of the UCSD baseball field to east of I-5 and south of Voigt Drive
- Relocation of the substation at Genesee Avenue and La Jolla Village Drive to the east of Genesee Avenue to the San Diego Gas & Electric substation facility on Fez Street

3.3.6 Refinements to Construction Staging Areas

The Build Alternative in the Draft SEIS/SEIR included 15 construction staging areas. Some of these were located at future park-and-ride lots, station areas, existing parking

lots, or portions of vacant private property. Comments were received on three of the identified staging areas that noted a conflict between the use of the property as a staging area and future approved development. By eliminating these areas as staging areas, these conflicts and any associated short-term impacts (e.g., loss of off-street parking) were avoided. Refinements were made to the number and location of construction staging areas based on comments received on the Draft SEIS/SEIR or due to refinements to the LRT alignment. The following four construction staging areas were eliminated:

- The site on Charmant Drive on the east side of I-5
- The site at the parking lot of Scripps Hospital located east of I-5 and north of Voigt Drive
- The site on the Monte Verde property at La Jolla Village Drive and Genesee Avenue
- The site on the Westfield UTC shopping center property

To address the shift in the alignment from the north to the south side of Voigt Drive, an additional construction staging site was identified. This site is on the UCSD parking lot located east of I-5 and south of Voigt Drive, where the new TPSS would be located. All other staging area sites identified in the Draft SEIS/SEIR are retained under the Refined Build Alternative.

3.3.7 Other Engineering Refinements

Other engineering refinements, as a result of further engineering studies, include changes in retaining walls and bridges. The most notable change in the Refined Build Alternative is the elimination of two retaining walls and the addition of two bridges north of La Jolla Colony Drive near the La Paz condominiums.



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4.0 ENVIRONMENTAL ANALYSIS, CONSEQUENCES, AND MITIGATION

This chapter evaluates the impact of the No-Build and Refined Build Alternatives on a new location of the federally endangered San Diego fairy shrimp (*Branchinecta sandiegonensis*) recently detected in the study area during the 2013-2014 wet season focused survey. The Mid-Coast Corridor Transit Project Section 7 Consultation Biological Assessment, included as Appendix B, provides specific information regarding federally listed threatened and endangered species. For additional information on other biological resources in the study area, refer to the Mid-Coast Corridor Transit Project Biological Resources Technical Report (San Diego Association of Governments [SANDAG], 2013b) and the Mid-Coast Corridor Transit Project Draft Supplemental Environmental Impact Statement and Subsequent Environmental Impact Report (SEIS/SEIR) (SANDAG, 2013a).

The Biological Assessment covers the analysis of impacts to all federally listed threatened and endangered species for the Refined Build Alternative; however, the impacts to the threatened and endangered species, except for the San Diego fairy shrimp, are consistent with the discussion in the Draft SEIS/SEIR. As such, the environmental analysis in this Supplemental Environmental Impact Statement/ Supplement to the Subsequent Environmental Impact Report is limited to the potential impact to the San Diego fairy shrimp in Basin II.

At the time the Draft SEIS/SEIR was prepared, and based on the results of wet season focused surveys conducted in 2010-2011 and 2011-2012, San Diego fairy shrimp had been observed in only one location within the study area (referred to as Basin BB), which was to the west of the existing Los Angeles–San Diego–San Luis Obispo Rail Corridor Agency (LOSSAN) tracks and outside the project impact area. Accordingly, the analysis in Chapter 4.0, Sections 4.8, 4.17, and 4.19 of the Draft SEIS/SEIR concluded that no long-term, construction, or cumulative impacts to San Diego fairy shrimp would occur as a result of the project. However, an ongoing wet season focused survey conducted in 2013-2014 to support regulatory permitting with the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife identified San Diego fairy shrimp in a new location, which is within the project impact area.

Formal consultation with USFWS under Section 7 of the federal Endangered Species Act was initiated by the Federal Transit Administration and SANDAG on June 12, 2014. Documentation of correspondence with USFWS regarding San Diego fairy shrimp is provided in Appendix A.

4.1 Surveys and Impact Assessment

4.1.1 Surveys

The survey area for biological resources, including the San Diego fairy shrimp, generally included all areas within 500 feet of the alignment from the Old Town Transit Center north to the University Towne Centre Transit Center¹. Figure 4-1 shows the areas surveyed for vernal pool branchiopods.

¹ Exceptions to the 500-foot survey areas are further described in Chapter 4.0, Section 4.8.1.2 of the Draft SEIS/SEIR (SANDAG, 2013a).



Figure 4-1. Fairy Shrimp Survey Area



Sources: DigitalGlobe, 2008; SANDAG, 2014



Wet season focused surveys were conducted according to the *Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods* (USFWS, 1996). In accordance with the survey guidelines, a complete survey for vernal pool branchiopods consists of sampling for two full wet season surveys within a 5-year period or two consecutive seasons of one wet season survey and one dry season survey. Following the first major rain event of the wet season, the study area was visited approximately every 2 weeks, until all inundated basins were observed dry. With any subsequent rains, ground surveys were reinitiated. All suitable basins (i.e., inundated greater than 3 centimeters) were sampled for the presence of vernal pool branchiopods. The survey included areas adjacent to the existing tracks from Rose Canyon in the north to Tecolote Road in the south (refer to the *Mid-Coast Corridor Transit Project Biological Resources Technical Report* [SANDAG, 2013b]).

Protocol-level sampling for the 2010–2011 wet season was initiated approximately 2 weeks following the major rain event on February 4, 2011, and was completed on June 6, 2011. A total of 42 basins were present. Protocol-level sampling for the 2011–2012 wet season was initiated on November 17, 2011, and was completed on July 23, 2012. A total of 54 basins were present, including the 42 basins that were surveyed the previous year. Protocol-level sampling for the 2013–2014 wet season was initiated on October 18, 2013, and was determined to be complete in May 2014. A total of 8 basins were present within the survey area, of which one (Basin MMM) was not present during previous surveys. In total, 55 basins were identified during the course of the surveys. A schedule of the 2013-2014 survey season is presented in Table 4-1.

Table 4-1. 2013-2014 Schedule of Surveys

Survey Number	Biologist	Date
1	PML	October 18, 2013
2	PML	December 2, 2013
3	PML	December 16, 2013
4	PML	January 2, 2014
5	PML	February 13, 2014
6	PML	February 26, 2014
7	PML	March 10, 2014
8	PML	March 24, 2014
9	PML	March 31, 2014
10	PML	April 10, 2014
11	PML	April 23, 2014
12	PML	April 30, 2014

Source: Dudek, 2014

Note: PML = Paul Lemons

Surveys for the 2013-2014 wet season were conducted by Dudek biologist Paul Lemons (PML; Permit # TE051248). All identified basins within the survey area (see Figure 4-1) were evaluated during each site visit to determine inundation levels, and sampling was performed where appropriate. Daily precipitation was monitored for weather station

KCASANDI58 near Morena Costco, San Diego, California (Weather Underground Inc., 2013-2014).

Protocol-level sampling was performed within all basins that were deemed suitable for use by fairy shrimp and any depressions meeting the USFWS inundation requirement (ponding at least 3 centimeters deep). The locations of detected basins sampled were recorded using a Global Positioning System unit and were alphabetically labeled.

During each survey all depressions were inspected for depth, surface area of water, air and water temperature, level of disturbance, and presence of aquatic wildlife. An aquarium net was passed through every basin that met the USFWS inundation requirement. All portions of ponded water were surveyed from the bottom to the surface.

Samples were collected, when needed, using the aquarium net and a 40 milliliter glass vial. Specimens were stored in the vial with water collected from where the specimen was found. Specimens were taken to the laboratory within 24 hours of collection and placed in a 90 percent ethyl alcohol solution for preservation. Each specimen was inspected thoroughly using a dissecting microscope. Eriksen and Belk (1999) was used to determine the species of each specimen collected.

4.1.2 Impacts Assessment

The assessment of impacts to San Diego fairy shrimp includes an evaluation of the project's long-term direct and indirect, construction (short-term) direct and indirect, and cumulative effects. For the purposes of evaluating these effects, long-term impacts and construction effects are analyzed for both the occupied habitat (i.e., occupied basin area) and the associated basin watershed. This section provides definitions of the potential effects that could occur. Impacts to San Diego fairy shrimp are described in Section 4.3. The California Environmental Quality Act significance determination is described in Chapter 5.0. Cumulative impacts are described in Chapter 6.0.

In Section 4.3 the impacts on San Diego fairy shrimp were analyzed under the No-Build and Refined Build Alternatives in the Mid-Coast Corridor. The No-Build, Build, and Refined Build Alternatives are described in Chapter 3.0 of this document. As stated in Section 1.1 of this document, the Refined Build Alternative is the same as the Build Alternative in the location of San Diego fairy shrimp basin (Basin II) identified during the 2013-2014 wet season surveys.

4.1.2.1 Long-Term Impacts

Direct Impacts

Long-term, direct impacts refer to the permanent loss of vegetation, land covers, and plant and animal species within a designated impact footprint and direct impacts to biological resources that would result from ongoing project operations.

Direct impacts typically occur during vegetation clearing, grading, or excavation associated with project implementation. Direct impacts to wildlife refer to loss of habitat and/or loss of, or harm to, individuals that can be immediately attributed to the project. Loss of, or harm to, individuals may vary by wildlife species, but the result is a net loss of

a portion of a species population. For example, equipment used for excavation or grading can cause direct wildlife mortality. For San Diego fairy shrimp, direct impacts to habitat include the permanent loss of all or a portion of an occupied basin. During the dry season, direct, physical disturbances to the soil in an occupied basin could result in the loss of, or harm to, San Diego fairy shrimp cysts that exist in the soil. During the wet-season, direct, physical disturbances to an occupied basin could cause adult fairy shrimp to be crushed or buried by sediment.

Indirect Impacts

The Council on Environmental Quality defines indirect impacts as “effects which are caused by the [proposed] action and are later in time or farther removed in distance, but are still reasonably foreseeable...” (40 Code of Federal Regulations 1508.8). Indirect impacts also may affect areas within or outside of the defined project area (e.g., outside the construction disturbance zone), including undeveloped areas outside the project area.

Indirect impacts may result from the proximity of development to biological resources following construction. Examples of typical long-term indirect impacts associated with development include light, noise, the introduction or spread of exotic and/or invasive plants and animals, increased human activity, trampling, vandalism, trash, urban runoff, and shading. Long-term indirect impacts can alter essential behaviors and cause stress in wildlife, increase predation of native species, and degrade habitat.

4.1.2.2 Short-Term Construction Impacts

Short-term or temporary impacts to biological resources that occur during construction can be direct or indirect. Short-term construction activities would impact biological resources until construction activities have ceased or, in some instances, until vegetation communities or other affected resources are reestablished or restored.

Construction of the overall project is estimated to take up to 4.5 years to complete. However, the estimated duration of construction activities in the vicinity of the occupied basin is not known at this time.

Direct Impacts

Direct construction impacts would be associated with construction access and ground improvements. Specifically, direct construction impacts would occur within the limits of work during clearing and grubbing and grading operations and from falsework and ground improvements. These activities would displace the resources dependent upon the existing vegetation community or land cover. This impact is considered temporary for locations where no permanent structures or other permanent disturbance would occur that would preclude restoration of the affected areas to pre-construction conditions. If construction impacts involve direct, physical disturbance to a species' habitat and restoration to pre-construction conditions is not possible, then the impacts are considered permanent.

Indirect Impacts

Indirect construction impacts on adjacent biological resources located outside the limits of construction work typically include noise, vibration, dust, lighting, increased human activity (e.g., construction workers), erosion and sedimentation, pollutants, and chemical

spills. These kinds of impacts can cause behavioral disruptions and stress in wildlife and degrade habitat adjacent to construction areas.

4.1.2.3 Cumulative Impacts

Cumulative impacts refer to the combined environmental effects of the project and other past, present, and reasonably foreseeable projects that would take place generally within the same geographic area. In some cases, the impact from a single project may not be adverse, but when combined with other projects, the cumulative impact may be substantial.

4.2 Affected Environment

For the purposes of this report, the affected environment includes the ephemeral basin² within the project impact area where San Diego fairy shrimp were detected (Basin II), as well as surrounding areas within approximately 500 feet (Figure 4-2). The occupied ephemeral basin, Basin II, is located within the exiting Metropolitan Transit System (MTS) right-of-way to the east of the existing LOSSAN tracks approximately 2,800 feet south of Clairemont Drive and 2,500 feet to the north of Tecolote Road. Photographs of Basin II inundated and dry are provided in Figure 4-3 and Figure 4-4, respectively.

Although San Diego fairy shrimp occur in Basin II, the ephemeral basin does not contain vernal pool plant indicator species. As stated in the *San Diego Municipal Code Land Development Code—Biology Guidelines* (City of San Diego, 2012), road ruts and other seasonal depressions that are not vernal pools may contain wildlife associated with vernal pools, such as fairy shrimp, but will not contain vernal pool plant indicator species. Seasonal depressions not containing vernal pool indicator plant species are usually not considered vernal pools by the City of San Diego. In addition, the ephemeral basin is not considered an aquatic resource under the jurisdiction of the U.S. Army Corps of Engineers pursuant to Section 404 of the federal Clean Water Act; the California Department of Fish and Wildlife pursuant to Section 1602 of the California Fish and Game Code; the Regional Water Quality Control Board pursuant to Section 401 of the federal Clean Water Act; or the City of San Diego pursuant to their Environmentally Sensitive Lands Regulations. The ephemeral basin is located within the Coastal Zone and meets the California Coastal Act definition of an Environmentally Sensitive Habitat Area due to the presence of a rare wildlife species; therefore, the basin is a coastal resource regulated by the California Coastal Commission.

4.2.1 Study Area and Surrounding Land Uses

Land uses in the affected environment consist of transportation uses. Morena Boulevard occurs within 100 feet east of Basin II. The existing MTS and California Department of Transportation (Caltrans) rights-of-way, along with a portion of the Interstate 5 north freeway, occur within 100 feet to the west. Additional land uses adjacent to the affected environment include single- and multifamily residential and commercial uses.

² An ephemeral basin is one that appears after a rain event and dries up shortly after the conclusion of the rain event. According to the USFWS criteria, a pool/swale (or basin) is considered to be inundated when it holds greater than 3 centimeters of standing water 24 hours after a rain event (USFWS, 1996).

Figure 4-2. Affected Environment



Source: SANDAG, 2014



Figure 4-3. Basin II Inundated



Source: SANDAG, 2014

Note: Photo taken March 10, 2014 by P. Lemons

Figure 4-4. Basin II Dry



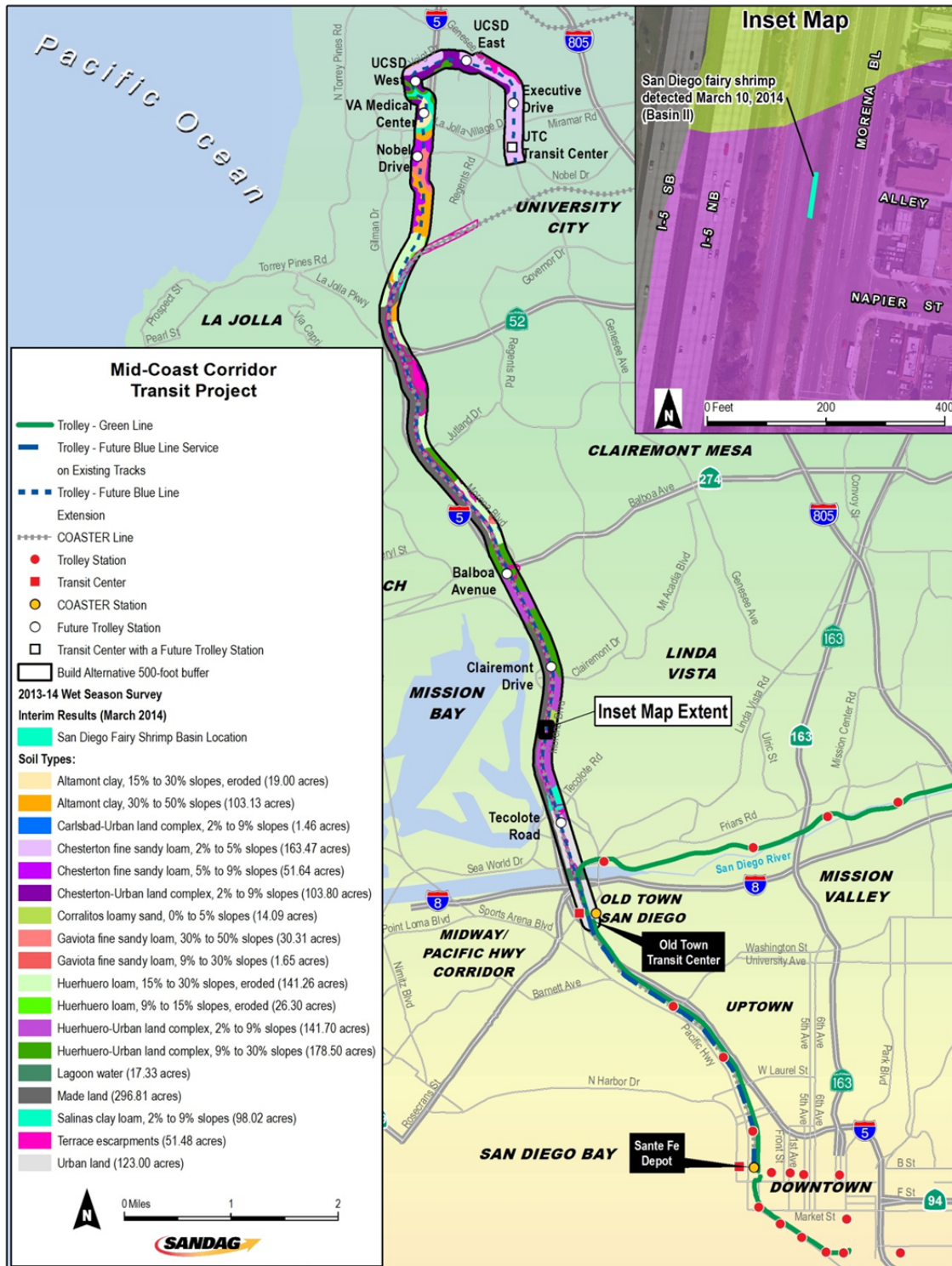
Source: SANDAG, 2014

Note: Photo taken April 10, 2014 by P. Lemons

4.2.2 Soils

Soils in the affected environment consist of Huerhuero-Urban land complex, 2 percent to 9 percent slopes, as shown on Figure 4-5. The Huerhuero series consists of moderately well-drained loams formed in sandy marine sediments. The surface layer is brown and pale brown, strong acid and medium acid loam approximately 12 inches thick. The subsoil is brown, moderately alkaline clay becoming mildly alkaline clay loam and sandy loam with depth. This series occurs on slopes that range from 2 to 9 percent. This complex occurs on marine terraces at elevations that range from sea level to 400 feet. The landscape has been altered through cut and fill operations and leveling for building sites; the slope was 2 to 9 percent prior to cut and fill operations. The material exposed in the cuts consists of unconsolidated sandy marine sediments. The materials in the fill are a mixture of loam and clay loam and sandy marine sediments.

Figure 4-5. Soils Map



Source: U.S. Department of Agriculture, 2010; SANDAG, 2014; San Diego Geographic Information Source, 2011

4.2.3 Drainages/Hydrology

The limits of the ephemeral basin containing San Diego fairy shrimp on March 10, 2014 (Basin II), at the time the species was observed, measured approximately 76 feet long by 5.5 feet wide, with a total area of approximately 425 square feet and a maximum depth of approximately 10 inches. Soils in this area belong to hydrologic soil group D (as defined by the Natural Resource Conservation Service), which provide poor infiltration. Surface water in this area has a short period of infiltration before it begins to sheet flow as runoff. Refer to Figure 4-3 and Figure 4-4 for photographs of Basin II inundated and dry, respectively.

Specifically, Basin II is located within a low point of an existing graded earthen drainage ditch west of Morena Boulevard, east of the existing LOSSAN Main Track 1 and approximately 150 feet north of the intersection of Morena Boulevard and Napier Street (Figure 4-6). The low point (or maximum ponding depth) is approximately 2 feet, and the basin is approximately 2,950 cubic-feet (0.039 acre-feet) in volume.

Basin II lies within an existing low point along a drainage ditch flowing to the south to a 48-inch culvert. Figure 4-6 provides a profile of the drainage ditch taken from project topography. Based upon project topography and field investigation, the Basin II watershed is 0.71 acre. The source of runoff to Basin II consists solely of accumulated precipitation (storm-water runoff) from the 0.71-acre watershed. There are no storm drain pipe discharges that provide an additional source of runoff to Basin II. Accumulated storm-water runoff within the Basin II watershed collects at the low point (elevation 13 feet) until such time that the water-surface elevation tops the southerly watershed boundary (elevation 15 feet) and continues flowing southerly to the 48-inch culvert.

Based upon an evaluation of average rainfall and evapotranspiration, this area would not typically pond for prolonged (monthly) periods of time. Instead, this area ponds due to individual rain events and likely dries within 1 to 2 weeks due to evaporation and infiltration. Extended ponding may occur if another storm event producing runoff occurs within the following 1 to 2 weeks.

Two other ephemeral basins (Basin GG and Basin JJ) within the affected environment (defined as the area within 500 feet of Basin II) were sufficiently inundated to be surveyed for vernal pool branchiopods during the 2010-2011 wet season, while a third ephemeral basin (Basin KK) was sufficiently inundated to be surveyed during the 2010-2011 and 2011-2012 wet seasons. These basins were not sufficiently inundated to be surveyed during the 2013-2014 wet season. No vernal pool branchiopods or vernal pool plant indicator species have been observed in these basins.

4.2.4 Vegetation Communities and Land Covers

The affected environment includes four vegetation communities and land covers: disturbed habitat, eucalyptus woodland, ornamental, and urban/developed. Except for eucalyptus woodland, which is categorized as a non-native woodland community, these communities can be categorized as “Disturbed and Developed Areas,” as

described by Holland (1986), and revised by Oberbauer et al. (2008). These vegetation communities and land covers are considered Tier IV³ in the *San Diego Municipal Code Land Development Code—Biology Guidelines* (City of San Diego, 2012), meaning they have limited habitat value. No native vegetation communities occur in the affected environment.

Disturbed habitat refers to areas that are not developed yet lack vegetation or are sparsely vegetated, and generally are the result of severe or repeated mechanical perturbation. Disturbed habitat in the affected environment includes areas without vegetation or areas composed of ruderal, non-native species, including sweet fennel (*Foeniculum vulgare*), crowndaisy (*Glebionis coronaria*), black mustard (*Brassica nigra*), sacred thorn-apple (*Datura wrightii*), and blue jacaranda (*Jacaranda mimosifolia*). Evidence of grading or other human disturbance is common.

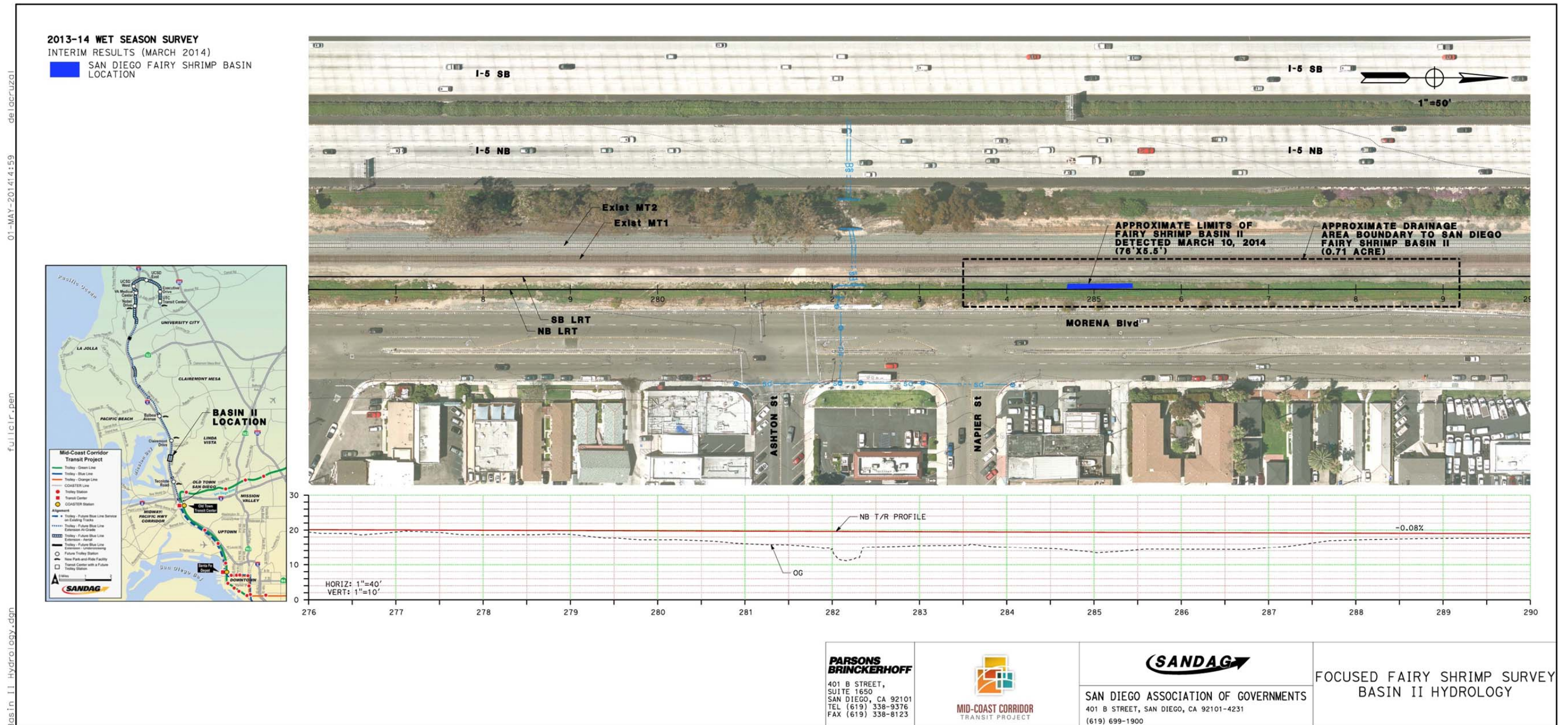
Eucalyptus woodland is not recognized by Holland (1986) but is recognized by Oberbauer et al. (2008). This “naturalized” vegetation community is fairly widespread in Southern California and is considered a woodland habitat. It typically consists of monotypic stands of introduced Australian eucalyptus trees. The understory is either depauperate or absent owing to shade and the possible allelopathic (toxic) properties of the eucalyptus leaf litter.

Ornamental refers to areas where non-native ornamental species and landscaping have been installed. Ornamental is not described by Holland (1986) and is included in disturbed habitat in Oberbauer et al. (2008). Ornamental areas are not typically regulated by environmental resource agencies unless they include jurisdictional wetlands. Other agencies, such as Caltrans or local governments, may require that disturbed or damaged ornamental plantings be replaced to restore aesthetics or function, such as screening or erosion control. Ornamental plantings occur throughout the affected environment and are common adjacent to the freeway and within the freeway median. These areas are dominated by planted non-native iceplant (*Carpobrotus* spp.), peppertree (*Schinus* spp.), acacia (*Acacia* spp.), and other non-native planted shrubs and trees.

Urban/developed land consists of buildings, structures, homes, parking lots, paved roads, and maintained areas. These areas do not support native vegetation. Urban/developed land occurs throughout the affected environment and includes the existing LOSSAN tracks, Morena Boulevard, and developed areas to the east, and the Interstate 5 freeway.

³ Tiers represent the sensitivity status of upland vegetation as defined by the City of San Diego, with Tier I being most sensitive and Tier IV being least sensitive. Wetland vegetation communities do not have a tier classification and are considered sensitive.

Figure 4-6. Basin II Hydrology



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4.2.5 San Diego Fairy Shrimp

San Diego fairy shrimp is a small aquatic crustacean (Figure 4-7) typically restricted to vernal pools and other non-vegetated ephemeral basins 2 to 12 inches in depth. The San Diego fairy shrimp occurs in the Great Central Valley and Coastal Mesa Systems (Eriksen and Belk 1999). The geographic range of the species extends from coastal Orange and San Diego Counties in southern California and in northwestern Baja California, Mexico (USFWS, 2007). This species is usually observed from January to March when seasonal rainfall fills vernal pools and initiates cyst (egg) hatching (USFWS, 2008). This species may also occasionally occur in ditches and road ruts. The shrimp hatch from cysts when cool water (5-20° Celsius for hatching) fills the pool and are mature in 10-20 days in the field (Eriksen and Belk, 1999). At maturity, mating takes place and cysts are dropped. Water characteristics of pools where this species is found include moderate pH (6.5-8) and alkalinity (40-55 parts per million); total dissolved solids (mean of 75 parts per million, as measured by conductivity) are low (Eriksen and Belk, 1999).

Figure 4-7. San Diego Fairy Shrimp



Source: Chaparral Lands Conservancy, 2012

Three males and one female San Diego fairy shrimp were collected from Basin II on March 10, 2014, and were positively identified in the lab on March 13, 2014. Refer to Section 4.2.3 for a description of Basin II on March 10, 2014. The habitat surrounding the basin is developed land. Water pools in this area as a result of graded slopes from the LOSSAN tracks as well as graded slopes from Morena Boulevard (Figure 4-2). In accordance with USFWS protocol requirements, notification was sent via e-mail to the USFWS on March 18, 2014, within 10 days of positive identification (Appendix C).

4.3 Environmental Impacts, Avoidance Analysis, and Mitigation

The following sections describe impacts on San Diego fairy shrimp in Basin II under the No-Build and Refined Build Alternatives, consideration of impact avoidance and minimization through design modifications, and mitigation measures.

4.3.1 No-Build Alternative

Under the No-Build Alternative, the Mid-Coast Corridor Transit Project would not be constructed and bus Route 150 service would be continued and enhanced. Physical changes associated with the No-Build Alternative would not result in direct or indirect impacts to San Diego fairy shrimp.

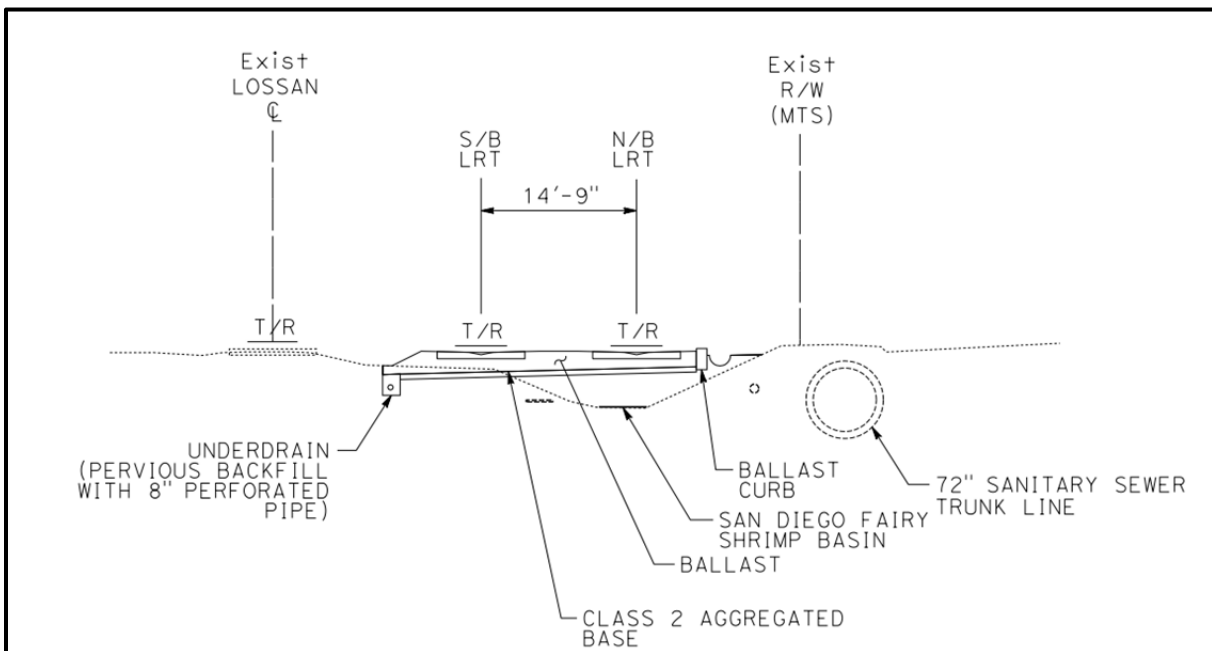
4.3.2 Refined Build Alternative

Implementation of the Refined Build Alternative would result in long-term and construction (short-term) impacts to the San Diego fairy shrimp in Basin II and the watershed in which it occurs. As described in Section 4.2.3, Basin II is located in an

existing graded earthen drainage ditch west of Morena Boulevard, east of the existing LOSSAN Main Track 1, and approximately 150 feet north of the intersection of Morena Boulevard and Napier Street (see Figure 4-6). Basin II would be directly impacted through grading and/or filling associated with at-grade track construction to accommodate installation of the new Trolley tracks.

The Trolley alignment as presented in the Draft SEIS/SEIR Plan Set would be located directly over the basin (Figure 4-8). At this location, the MTS right-of-way is approximately 10 feet from the curb line and Basin II is located entirely within the MTS right-of-way. The new Trolley tracks in the vicinity of the basin would be constructed at grade with new stations located approximately 0.5 mile north and 0.85 mile south of the basin at Clairemont Drive and Tecolote Road, respectively.

Figure 4-8. Refined Build Alternative at Basin II



Source: SANDAG, 2014

4.3.2.1 Impact Avoidance Analysis

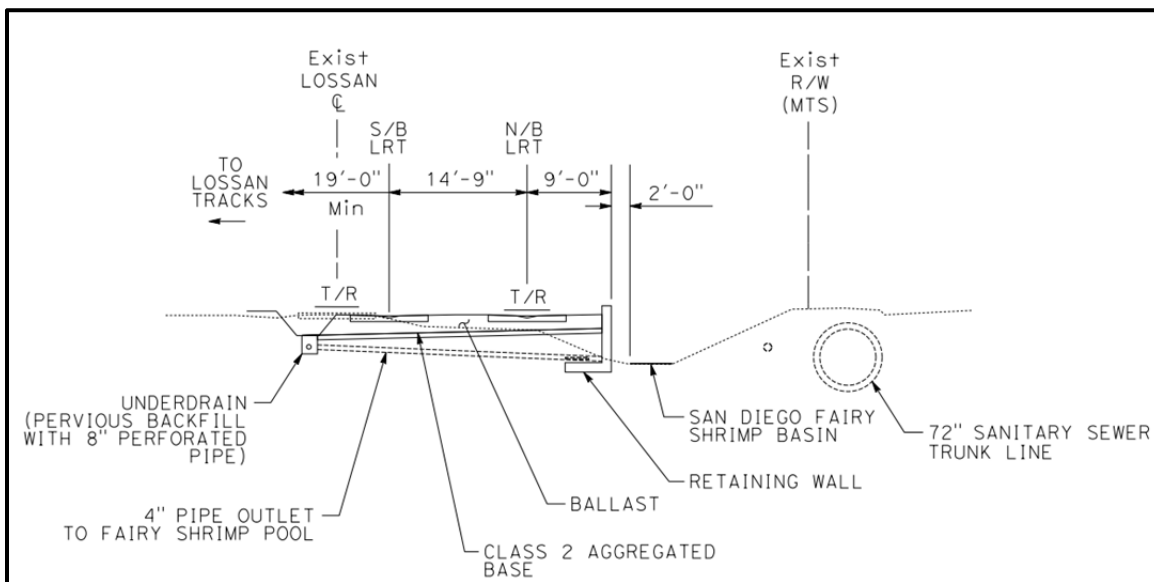
As described in detail below, SANDAG evaluated whether impacts to San Diego fairy shrimp within Basin II could be avoided through design modifications. Both direct and indirect impacts to Basin II could adversely affect the San Diego fairy shrimp within the basin. Impacts to the basin watershed would result in indirect impacts to Basin II. The evaluation concluded that even with design modifications, long-term direct and indirect impacts to the basin watershed would be unavoidable, resulting in long-term indirect impacts to Basin II, and direct impacts to Basin II also would occur during construction. Therefore, adverse impacts to San Diego fairy shrimp could not be completely avoided.

The evaluation identified design modifications that would be needed to avoid direct and indirect impacts to Basin II, including avoiding direct impacts to the basin watershed. To

accomplish this, the Trolley tracks proposed under the Refined Build Alternative would need to be realigned to avoid placing the Trolley tracks immediately over Basin II and the basin watershed. Realignment of the Trolley tracks in this area would be challenging and constrained due to existing facilities on each side of the Trolley tracks.

To the east, a 72-inch trunk line sewer is located just outside of the MTS right-of-way (Figure 4-9) and is roughly parallel to the tracks. The sewer line flows at 0.15 percent slope and its relocation is not feasible. Thus, it is not feasible to avoid impacts to Basin II by shifting the Trolley tracks to the east.

Figure 4-9. Avoidance Design at Basin II



Source: SANDAG, 2014

To realign the Trolley tracks to the west, the existing LOSSAN tracks would have to be moved to the west by 20 feet in the vicinity of Basin II. This would require realigning the LOSSAN tracks along approximately 1.75 miles, adjacent to the westerly MTS right-of-way. In addition, two existing crossovers, together with their associated overhead signals and signal cabinets located approximately 1,000 feet north of Basin II, would have to be relocated.

Even with the LOSSAN tracks shifted to the west, there is insufficient area within the MTS right-of-way to accommodate the Trolley tracks while completely avoiding the basin watershed. Thus, a retaining wall next to Basin II would also be required (Figure 4-9) due to the proximity of the Trolley tracks. The retaining wall and its footing could be designed to avoid encroaching into the basin, but would be within the basin watershed. The face of the retaining wall would be located about 2 feet from the edge of the basin.

Because of the proximity of the alignment to the westerly MTS right-of-way, a retaining wall would be required for approximately 1.25 miles to provide sufficient area for the relocated LOSSAN tracks. For more than one-half of the length of retaining wall, the wall footing would be located outside of the MTS right-of-way, requiring the relocation of

existing gas, sewer, and fiber optics lines. A portion of these facilities may have to be relocated to Caltrans right-of-way, which would require additional coordination.

The realignment of the LOSSAN tracks would result in schedule impacts to existing rail operations. Relocation of the LOSSAN tracks and crossovers would require single-track operation under slow orders for approximately 2 miles for approximately 8 to 9 months. Single tracking of LOSSAN operation in this location, together with construction activities along the LOSSAN tracks in other locations of the corridor (as described in Chapter 3.0, Section 3.4.7.1 of the Draft SEIS/SEIR), would increase the magnitude of the construction impact to Amtrak and COASTER schedules.

Construction cost for this design modification would be approximately \$15 million, in 2013 dollars. The costs associated with planning, permitting, design, and construction management is estimated at \$5 million, for a total of \$20 million. Escalation and finance costs add approximately 40 percent to the cost, making the total probable cost of this design modification approximately \$28 million in year of expenditure.

These design modifications would avoid long-term, direct impacts to Basin II; however, the proximity of the retaining wall and the northbound Trolley tracks immediately behind it would directly affect the basin watershed, which would have significant long-term indirect impacts on the basin as a result of changes to hydrology. As a result, long-term adverse impacts to San Diego fairy shrimp could not be avoided.

With respect to construction impacts, establishing a buffer to protect the basin and its watershed from indirect impacts is not feasible due to the constrained width of the right-of-way and the intensive construction activities required (e.g., grading, placing ballast, and constructing retaining walls). The proximity of substantial soil-disturbing activities in the immediate vicinity of the basin would result in substantial indirect impacts due to dust, erosion, sedimentation, and chemicals or pollutants. The construction of the retaining wall within 2 feet of Basin II would require excavation, which would result in short-term direct construction impacts to the basin. Standard construction best management practices (BMPs) to control construction dust, erosion, and runoff, including pollutants and chemical spills, would be incorporated as part of the project design and would substantially reduce these impacts. Typical BMPs include reducing erosion through soil stabilization, watering for dust control, and installing perimeter controls (e.g., silt fencing, straw wattles, gravel bags). All project construction would be subject to the typical restrictions and requirements that address erosion and runoff, including the federal Clean Water Act, the National Pollution Discharge Elimination System, and preparation and implementation of a Stormwater Pollution Prevention Plan. Even with standard construction BMPs designed to minimize these impacts, substantial indirect impacts would still occur to the basin and its watershed due to the proximity of the basin to intensive construction activities.

In conclusion, the design modification would not avoid direct and indirect impacts to the San Diego fairy shrimp in Basin II, would add substantial cost to the project, would increase the duration of construction and associated impacts, and would result in other environmental impacts associated with relocating the LOSSAN tracks, constructing retaining walls, and relocating utilities. Based on this evaluation of the design modifications, avoiding direct and indirect impacts to San Diego fairy shrimp, Basin II,

and the associated watershed is considered to be infeasible. As such, the design modifications were not carried forward and the potential long-term and construction (short-term) impacts of the project are analyzed for the Refined Build Alternative without the incorporation of the avoidance measures described above.

4.3.2.2 Long-term Impacts

With implementation of the Refined Build Alternative, San Diego fairy shrimp present in Basin II and the associated basin watershed would be directly impacted by the Refined Build Alternative through grading and/or filling associated with at-grade track construction in this location. The project would result in the loss of an ephemeral basin occupied by San Diego fairy shrimp as a result of improvements within the existing MTS right-of-way associated with new track construction. Basin II is located to the east of the existing tracks and measured approximately 76 feet long and 5.5 feet wide at the time San Diego fairy shrimp were observed, with an area of approximately 425 square feet and a maximum depth of 10 inches. In addition to the basin area itself, the basin watershed would also be directly impacted by grading and other improvements associated with new track construction. This impact would be considered adverse without mitigation.

Although 54 other ephemeral basins have been documented in the project study area during focused surveys for vernal pool branchiopods in the 2010-2011, 2011-2012, and 2013-2014 wet seasons, San Diego fairy shrimp have only been recorded in one other location (Basin BB) to the west of the existing LOSSAN tracks and outside of the project impact footprint. As described in Chapter 4.0, Section 4.8.3 of the Draft SEIS/SEIR (SANDAG, 2013a) and Chapter 5.0 of the *Mid-Coast Corridor Transit Project Biological Resources Technical Report* (SANDAG, 2013b), San Diego fairy shrimp in Basin BB would not be adversely affected by the project. There are no new impacts to this basin.

Surveys to date have not detected San Diego fairy shrimp or vernal pool habitats in other ephemeral basins, ditches, or ruts within the project alignment; therefore, there is a low potential for the discovery of additional San Diego fairy shrimp locations in the future. With the incorporation of mitigation (described in Section 4.3.3), impacts associated with any future discoveries would be reduced.

4.3.2.3 Construction Impacts

Under the Refined Build Alternative, grading and filling associated with at-grade track construction would result in the permanent loss of San Diego fairy shrimp and the occupied Basin II. No additional short-term construction impacts would occur.

4.3.3 Mitigation Measures

Impacts to San Diego fairy shrimp would be mitigated through the following:

- BI05 Impacts to ephemeral basins occupied by San Diego fairy shrimp, including Basin II, would be mitigated at a 2:1 ratio through restoration and/or enhancement of vernal pools within west Otay Mesa on the 40-acre Anderprizes parcel, which was previously acquired for future mitigation of vernal pools and



which has been approved by the USFWS for mitigation of impacts to San Diego fairy shrimp, or within another approved mitigation area acceptable to the USFWS. Restoration would be conducted at a minimum 1:1 ratio to achieve a no-net-loss of San Diego fairy shrimp habitat; a combination of restoration and enhancement would make up the remaining mitigation. Restoration would be conducted in accordance with a vernal pool restoration plan to be developed by SANDAG and subject to approval by the USFWS prior to project construction.

The 40-acre Anderprizes parcel has sufficient mitigation areas to offset the impacts associated with the project. However, in the event that other mitigation locations are identified, mitigation at such sites also would include the implementation of a vernal pool restoration, enhancement, and/or preservation plan subject to the approval of USFWS prior to project construction. SANDAG would ensure that the mitigation areas would be conserved in perpetuity, including providing financial assurances and/or securing conservation easements, as necessary for USFWS approval.

As stated in Section 4.2.3, due to the presence of San Diego fairy shrimp, Basin II is a coastal resource subject to California Coastal Commission (CCC) regulation. Additional mitigation requirements may be identified by the CCC for impacts to Basin II during the permitting process for the Coastal Development Permit (CDP). The requirement for a CDP for the project is presented in the Draft SEIS/SEIR in Chapter 4.0, Sections 4.1.2 and 4.22, including the need to satisfy Coastal Act policies relating to habitat protection.

Regardless of any additional permit requirements for the CDP, with implementation of mitigation measure BIO5, impacts to the San Diego fairy shrimp would not be adverse.

5.0 CALIFORNIA ENVIRONMENTAL QUALITY ACT DETERMINATION

Based on the California Environmental Quality Act (CEQA) Environmental Checklist (Appendix G of the CEQA Guidelines) and the City of San Diego *CEQA Significance Determination Thresholds* (City of San Diego, 2011), SANDAG has developed CEQA thresholds of significance for use in evaluating the impacts of the Mid-Coast Corridor Transit Project to the biological resources discussed below.

No Impact (No-Build Alternative). Under the No-Build Alternative, bus Route 150 would not result in short-term or long-term impacts to San Diego fairy shrimp. Thus, the analysis below focuses on the Refined Build Alternative.

Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as being a candidate, sensitive, or special-status species in the Multiple Species Conservation Program (MSCP) or other local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or the U.S. Fish and Wildlife Service?

Significant Impact (Refined Build Alternative). The Refined Build Alternative would have significant impacts on the federally listed endangered San Diego fairy shrimp, both through long-term direct impacts on the species and through the loss of occupied habitat (i.e., Basin II). However, mitigation measures are proposed to reduce these impacts to below significance, as described in Section 4.3.3.

Would the project have a substantial adverse⁴ effect on any Tier I Habitats, Tier II Habitats, Tier IIIA Habitats, or Tier IIIB Habitats, as identified in the San Diego Municipal Code Land Development Code—Biology Guidelines (City of San Diego, 2012) or other sensitive natural communities identified in local or regional plans, policies, or regulations, or by the CDFW or the USFWS?

No Impact (Refined Build Alternative). As described in Section 4.2.4, only Tier IV habitats occur in the affected environment, meaning these communities have limited habitat value and do not require mitigation under the *San Diego Municipal Code Land Development Code—Biology Guidelines* (City of San Diego, 2012).

Would the project have a substantial adverse⁵ impact on wetlands (including, but not limited to, marsh, vernal pool, riparian, etc.) through direct removal, filling, hydrological interruption, or other means?

No Impact (Refined Build Alternative). As stated in Section 4.2, the ephemeral basin is not considered an aquatic resource under the jurisdiction of the U.S. Army Corps of Engineers pursuant to Section 404 of the federal Clean Water Act; the California Department of Fish and Wildlife pursuant to Section 1602 of the California Fish and Game Code; the Regional Water Quality Control Board pursuant to Section 401 of the federal

⁴ Impacts of less than 0.1 acre are not considered significant (City of San Diego, 2011).

⁵ Substantial adverse impacts on wetlands include any direct loss of wetlands. Total wetland impacts less than 0.01 acre are not considered significant, except for vernal pools or wetlands within the Coastal Zone (City of San Diego, 2011).

Clean Water Act; or the City of San Diego pursuant to its Environmentally Sensitive Lands Regulations.

Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, including linkages identified in the MSCP, or impede the use of native wildlife nursery sites?

No Impact (Refined Build Alternative). Basin II does not function as a wildlife movement corridor or linkage.

Would the project conflict with the provisions of an adopted habitat conservation plan, natural conservation community plan, or other approved local, regional, or state habitat conservation plan, either within the MSCP area or in the surrounding region?

Less-Than-Significant Impact (Refined Build Alternative). The project would be consistent with adopted plans, as discussed in Chapter 4.0, Section 4.8.3.2 of the *Mid-Coast Corridor Transit Project Draft Supplemental Environmental Impact Statement/ Subsequent Environmental Impact Report* (SANDAG, 2013a).

Would the project introduce land use within an area adjacent to the Multi-Habitat Planning Area that would result in adverse edge effects?

No Impact (Refined Build Alternative). The improvements that would affect the San Diego fairy shrimp (Basin II) are not located adjacent to the Multi-Habitat Planning Area; therefore, no edge effects would occur within or adjacent to the affected environment.

Would the project introduce invasive species of plants into a natural open space area?

No Impact (Refined Build Alternative). The improvements that would affect the San Diego fairy shrimp in Basin II are not located adjacent to or within natural open space; therefore, there are no impacts to natural open space that would occur within or adjacent to the affected environment.

6.0 CUMULATIVE IMPACTS

This chapter evaluates the cumulative impacts of the No-Build and Refined Build Alternatives on the San Diego fairy shrimp. Cumulative impacts refer to the combined environmental effects of the project and other past, present, and reasonably foreseeable projects that would take place generally within the same geographic area.

6.1.1 No-Build Alternative

As described in the *Mid-Coast Corridor Transit Project Draft Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report* (SANDAG, 2013a), Chapter 2.0 of this document, and in the *Mid-Coast Corridor Transit Project Biological Resources Technical Report* (SANDAG, 2013b), the No-Build Alternative assumes implementation of the planned transportation improvements committed to be implemented by 2030, as identified in the *2030 San Diego Regional Transportation Plan: Pathways for the Future* (SANDAG, 2007) under the Revenue Constrained Scenario, except for the Mid-Coast Corridor Transit Project. The No-Build Alternative would include the continuation and enhancement of bus service by Route 150 operating between Downtown San Diego, the Old Town Transit Center, and University City. This would not result in any adverse impacts to San Diego fairy shrimp. As such, the No-Build Alternative would not result in or contribute to cumulative impacts to the San Diego fairy shrimp.

6.1.2 Refined Build Alternative

As stated in Chapter 5.0, Section 5.2.2 of the *Mid-Coast Corridor Transit Project Biological Resources Technical Report* (SANDAG 2013b), the majority of the projects included in the cumulative impact analysis are located within or adjacent to existing developed rights-of-way in urbanized areas. Regional growth and development is also expected to affect areas primarily within urbanized areas. The cumulative impact of the Refined Build Alternative on regional biological resources is expected to be limited. Future projects would undergo separate environmental review and would be permitted for construction consistent with federal, state, and local regulations, plans, and policies. These regulations, plans, and policies are in place to protect biological resources.

Although San Diego fairy shrimp was observed in the study area, the affected basin is located within the existing Metropolitan Transit System right-of-way in an otherwise developed area with limited long-term conservation value for the species. The hydrology of the occupied basin consists solely of accumulated precipitation (storm-water runoff) from the 0.71-acre watershed. With implementation of the proposed mitigation, habitat for San Diego fairy shrimp would be restored in areas with greater long-term conservation value. As such, the project would not result in or contribute to cumulative impacts on San Diego fairy shrimp within the corridor.



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MID-COAST CORRIDOR
TRANSIT PROJECT

Appendix A

Agency Correspondence

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of Transportation
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" JUN 12 2014

Ms. Lauren Kershek
U.S. Fish and Wildlife Service
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

Re: Section 7 Consultation for the Mid-Coast Corridor
Transit Project, San Diego, CA
(FWS SDG-10B0572-10TA0757)

Dear Ms. Kershek:

The Federal Transit Administration (FTA) is the lead federal agency for the Mid-Coast Corridor Transit Project located in San Diego, California. The San Diego Association of Governments (SANDAG) is the local lead agency and designated non-Federal representative per 50 Code of Federal Regulations (CFR) §402.08. Pursuant to 50 CFR §402.14, the FTA requests initiation of formal consultation with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act for the Project. The FTA also requests concurrence from the USFWS on the determination of effect on federal listed endangered species.

Project Description

The Mid-Coast Corridor Transit Project would extend the existing San Diego Trolley (Trolley) Blue Line from the Santa Fe Depot north via the existing Trolley tracks within the Metropolitan Transit System (MTS) right-of-way for approximately 3.5 miles to just north of the Old Town Transit Center (OTTC) and south of the San Diego River. North of this point, the Project includes construction of 10.9 miles of new double track extending to the terminus at the University Towne Centre Transit Center in University City. The Project includes nine new stations at Tecolote Road, Clairemont Drive, Balboa Avenue, Nobel Drive, Veterans Administration Medical Center, University of California at San Diego (UCSD) West Campus, UCSD East Campus, Executive Drive, and the University Towne Centre Transit Center (see Figure 2-1 in the BA). In addition, the Project includes upgrades to existing systems facilities between the Santa Fe Depot and the OTTC, and the acquisition of new Trolley vehicles for the extended Project operation.

Consultation History

In February 2013, in cooperation with the FTA, SANDAG submitted a letter requesting the initiation of informal federal Endangered Species Act Section 7 consultation with the USFWS. Species of interest included the federally listed threatened coastal California gnatcatcher (*Poliophtila californica californica*), federally listed endangered San Diego fairy shrimp (*Branchinecta sandiegonensis*), federally listed endangered least Bell's vireo (*Vireo bellii pusillus*), and federally listed endangered southwestern willow flycatcher (*Empidonax traillii extimus*). The USFWS requested additional information related to the Project in March 2013, which was provided by SANDAG that month. The *Mid-Coast Corridor Transit Project Draft Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report* and supporting technical reports were submitted to USFWS during the 60-day public review and comment period from May 17 to July 17, 2013. In November 2013, SANDAG discussed the Project further with USFWS. Informal consultation was extended to consider the light-footed clapper rail (*Rallus longirostris levipes*), which is known to occur in the San Diego River to the west of the Project.

At SANDAG's request, in January 2014, USFWS provided a summary of the Section 7 consultation to date and updates on the listing of threatened and endangered species. In April 2014, FTA and SANDAG held a conference call with USFWS to discuss the recent detection of San Diego fairy shrimp within the



project impact area and the need for formal Section 7 consultation. A follow-up field meeting was held with USFWS, FTA, and SANDAG on May 6, 2014 to view the impact area and the proposed mitigation site. The enclosed Biological Assessment (BA), completed in accordance with 50 CFR §402.12, includes additional detail on the consultation history as well as information on the mitigation as discussed in the field meeting.

Survey Results and Effects

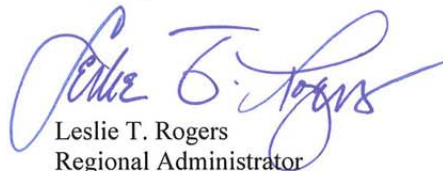
Focused surveys were conducted for the Project in 2010, 2012, and 2014. No federally-listed species were recorded during any of the focused plant surveys. Based on the results of focused surveys and the presence of potentially suitable habitat in the study area, the following species of concern have been identified: San Diego fairy shrimp, coastal California gnatcatcher, least Bell's vireo, southern willow flycatcher, and light-footed clapper rail. No critical habitat for wildlife species listed as federally threatened or endangered occurs in the study area.

Potential habitat for federally listed species could be directly or indirectly affected by the construction of the Project. Direct effects may include permanent (long-term) impacts from loss and shading of suitable habitat due to new track construction, track realignment, and maintenance of associated structures and facilities and/or temporary (short-term) construction-related impacts. Indirect construction impacts on adjacent biological resources located outside the limits of work typically include noise, vibration, dust, lighting, increased human activity (e.g., construction workers), erosion and sedimentation, pollutants, and chemical spills. Section 5 in the BA discusses the long-term (direct and indirect), construction, and cumulative effects of the Project on federally listed wildlife species and vegetation communities as well as the proposed mitigation to minimize and avoid impacts. Table 4-1 provides a summary of the impacts to vegetation communities and land covers while Table 4-2 includes an overview of the impacts to wetlands and waters of the U.S.

Implementation of the Project would result in the loss of an occupied San Diego fairy shrimp basin and, therefore, implementation of the Project "may affect, and is likely to adversely affect" San Diego fairy shrimp. With implementation of the proposed avoidance, minimization, and mitigation measures described in the BA, the Project "may affect, but is not likely to adversely affect" coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, and light-footed clapper rail. The FTA requests that USFWS concur with this finding of effect.

If you have any questions regarding our request, please contact Mary Nguyen, FTA Environmental Protection Specialist, by phone at (213) 202-3960 or by email at mary.nguyen@dot.gov or contact Leslie Blanda, SANDAG Project Development Program Manager, by phone at (619) 699-6907 or by email at lbl@sandag.org.

Sincerely,



Leslie T. Rogers
Regional Administrator

cc: Leslie Blanda, SANDAG

Enclosure:

Mid-Coast Corridor Transit Project Section 7 Consultation Biological Assessment, May 2014



MID-COAST CORRIDOR
TRANSIT PROJECT

Appendix B Section 7 Consultation Biological Assessment

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MID-COAST CORRIDOR TRANSIT PROJECT

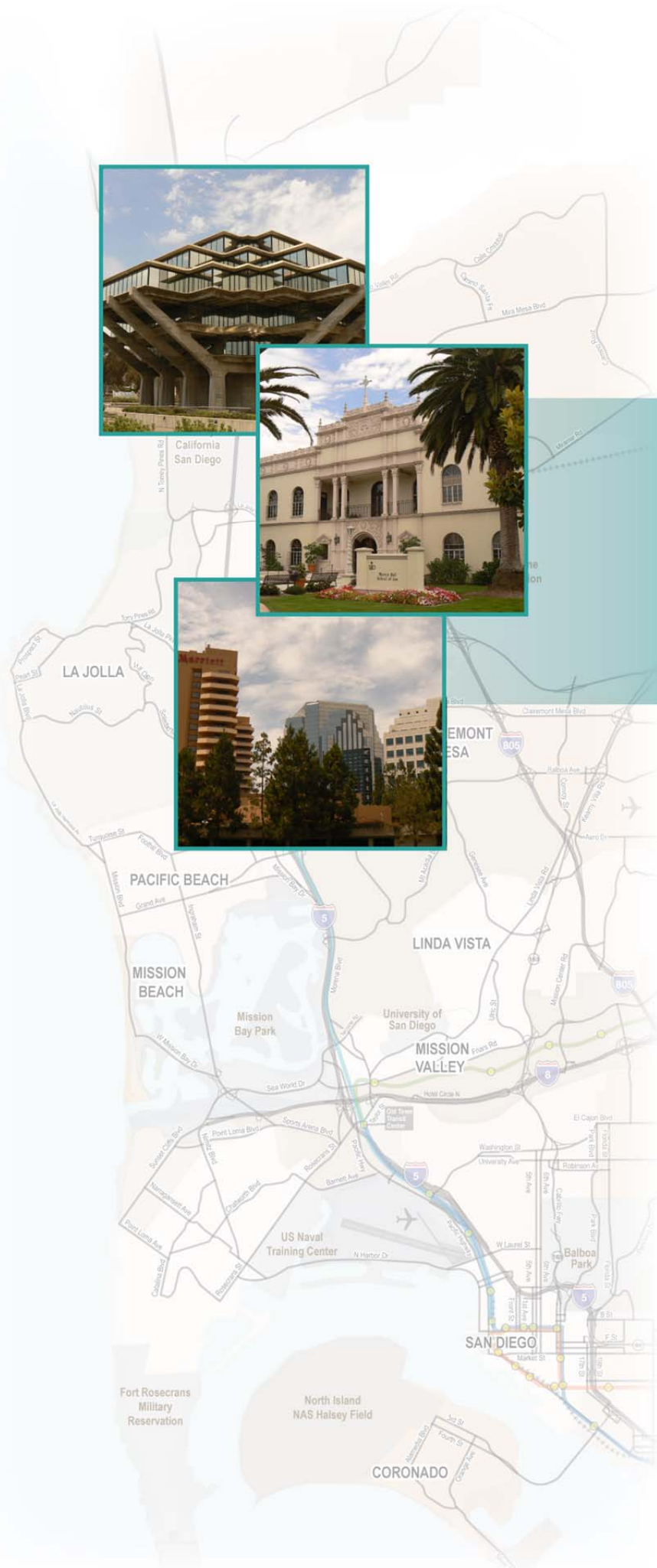
Section 7 Consultation Biological Assessment

June 2014

Prepared by
SANDAG



California
San Diego





MID-COAST CORRIDOR

TRANSIT PROJECT

Section 7 Consultation Biological Assessment June 2014

Prepared by:
The San Diego Association of Governments (SANDAG)



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Table of Contents

1.0	INTRODUCTION.....	1-1
1.1	Species List	1-1
1.2	Critical Habitat	1-5
1.3	Consultation to Date	1-5
2.0	DESCRIPTION OF THE PROPOSED ACTION	2-1
2.1	Project Location.....	2-1
2.2	Existing Site Conditions.....	2-1
2.2.1	Study Area and Surrounding Land Uses	2-1
2.2.2	Soils	2-3
2.2.3	Terrain	2-3
2.2.4	Vegetation Communities.....	2-5
2.2.5	Waters of the U.S.	2-8
2.3	Proposed Action	2-8
2.4	Definition of Action Area	2-9
2.4.1	Alignment.....	2-9
2.4.2	Stations.....	2-15
2.4.3	Trolley Vehicle Fleet and Maintenance Facilities.....	2-16
2.4.4	Power System and Signaling.....	2-16
2.4.5	Operating Plan.....	2-18
3.0	FEDERALLY LISTED SPECIES AND THEIR HABITAT	3-1
3.1	Coastal California Gnatcatcher	3-1
3.2	Southwestern Willow Flycatcher and Least Bell's Vireo.....	3-2
3.3	Light-footed Clapper Rail.....	3-4
3.4	San Diego Fairy Shrimp	3-19
3.5	Special-Status Plants	3-20
4.0	SUMMARY OF EFFECTS	4-1
4.1	Long-Term Impacts	4-1
4.2	Construction Impacts.....	4-2
4.3	Cumulative Impacts	4-3
4.4	Summary of Impacts to Vegetation Communities and Land Covers	4-7
4.5	Summary of Impacts to Waters of the U.S.	4-8
5.0	FEDERALLY LISTED SPECIES	5-1
5.1	Coastal California Gnatcatcher	5-1
5.1.1	Long-term Impacts.....	5-2
5.1.2	Construction (Short-term) Impacts.....	5-3
5.1.3	Avoidance, Minimization, and Mitigation Measures.....	5-4
5.1.4	Determination of Effect	5-6
5.2	Southwestern Willow Flycatcher and Least Bell's Vireo.....	5-7
5.2.1	Long-term Impacts.....	5-7
5.2.2	Construction (Short-term) Impacts.....	5-7
5.2.3	Avoidance, Minimization, and Mitigation Measures.....	5-8
5.2.4	Determination of Effect	5-9



5.3	Light-footed Clapper Rail.....	5-9
5.3.1	Long-term Impacts.....	5-9
5.3.2	Construction (Short-term) Impacts.....	5-10
5.3.3	Avoidance, Minimization, and Mitigation Measures.....	5-10
5.3.4	Determination of Effect	5-10
5.4	San Diego Fairy Shrimp	5-11
5.4.1	Long-term Impacts.....	5-11
5.4.2	Construction (Short-term) Impacts.....	5-11
5.4.3	Avoidance, Minimization, and Mitigation Measures.....	5-11
5.4.4	Determination of Effect	5-12
6.0	RELEVANT REPORTS PREPARED	6-1
7.0	REFERENCES.....	7-1

List of Appendices

A	MID-COAST OBSERVED PLANT SPECIES	A-1
B	MID-COAST OBSERVED WILDLIFE SPECIES	B-1
C	SPECIAL-STATUS SPECIES NOT OBSERVED AND WITH LOW POTENTIAL OR NOT EXPECTED TO OCCUR ON SITE	C-1
D	FOCUSED SURVEY REPORTS	D-1

List of Figures

Figure 2-1.	Mid-Coast Corridor Transit Project.....	2-2
Figure 2-2.	Soils Map.....	2-4
Figure 2-3.	Topography	2-6
Figure 2-4.	Conceptual Plan and Profile of Mid-Coast Corridor Transit Project	2-11
Figure 2-5.	Existing Traction Power Substation at a Street North of Santa Fe Depot	2-16
Figure 2-6.	Refined Build Alternative Opening Year Trolley Operating Plan	2-20
Figure 2-7.	Refined Build Alternative 2030 Trolley Operating Plan	2-21
Figure 3-1.	Federally Listed Species Locations, Habitat, and Proposed Impacts, Maps 1 through 8	3-5
Figure 4-1.	San Diego Fairy Shrimp Basin II Hydrology	4-5



List of Tables

Table 2-1.	Mapped Soil Series and Units in the Special-Status Plant Survey Area	2-3
Table 2-2.	Vegetation Communities and Land Covers	2-7
Table 2-3.	Waters of the U.S. in the Study Area by Vegetation Community	2-8
Table 2-4.	Traction Power Substations Locations	2-17
Table 2-5.	Trolley Operating Plans	2-18
Table 4-1.	Impacts to Vegetation Communities and Land Covers	4-8
Table 4-2.	Impacts to Waters of the U.S. by Vegetation Type.....	4-9



Abbreviations

The following acronyms, initialisms, and short forms are used in this report.

amsl	above mean sea level
C&S	communications and signaling
Caltrans	California Department of Transportation
CDFG	California Department of Fish and Game (name changed to California Department of Fish and Wildlife on January 1, 2013)
DARs	direct-access ramps
dBA	A-weighted decibel
EMP	Environmental Mitigation Program
ESA	Endangered Species Act
FTA	Federal Transit Administration
I-	Interstate
L _{eq}	equivalent sound level
LOSSAN	Los Angeles—San Diego—San Luis Obispo Rail Corridor Agency
LRVs	light rail vehicles
MHPA	Multi-Habitat Planning Area
MSCP	Multiple Species Conservation Program
MTS	Metropolitan Transit System
OTTC	Old Town Transit Center
quad	quadrangle
SANDAG	San Diego Association of Governments
SEIS/SEIR	Supplemental Environmental Impact Statement and Subsequent Environmental Impact Report
SR	State Route
study area	biological resources study area
TPSS	traction power substation
Trolley	San Diego Trolley
UCSD	University of California, San Diego



USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UTC	University Towne Centre
VA	Veterans Administration



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1.0 INTRODUCTION

The purpose of this biological assessment is to review the Mid-Coast Corridor Transit Project in sufficient detail to determine to what extent the proposed action may affect any threatened, endangered, proposed, or candidate species. This biological assessment was prepared in accordance with legal requirements set forth under Section 7 of the federal Endangered Species Act (ESA) (16 United States Code 1536 (c)).

Sensitive biological resources present or potentially present in the study area were identified through a literature search using the following sources: the California Natural Diversity Database (California Department of Fish and Game [CDFG], 2012a), the Inventory of Rare and Endangered Plants (California Native Plant Society, 2011), U.S. Fish and Wildlife Service (USFWS) data (USFWS, 2008), and USFWS Critical Habitat (USFWS, 2012). A nine-quadrangle (quad) search was performed for the U.S. Geological Survey (USGS) quads in which the survey area is found, and the surrounding quads were searched: Del Mar, Del Mar OE¹ W, Encinitas, Escondido, Imperial Beach, Imperial Beach OE W, La Jolla, La Jolla OE W, La Mesa, National City, Point Loma, Point Loma OE W, Poway, and Rancho Santa Fe. All federally listed species identified in the search are considered in this document. Vegetation mapping and jurisdictional delineation has been completed within the study area, and focused surveys have been conducted for special-status plants and wildlife. Refer to Appendix A and Appendix B for a complete list of plant and wildlife species observed during all surveys conducted for the project.

1.1 Species List²

Federal Endangered Species

- San Diego ambrosia (*Ambrosia pumila*)
- Del Mar manzanita (*Arctostaphylos glandulosa* ssp. *crassifolia*)
- Coastal dunes milk-vetch (*Astragalus tener* var. *titi*)
- Nevin's barberry (*Berberis nevinii*)
- Salt marsh bird's-beak (*Chloropyron maritimum* ssp. *maritimum*)
- Orcutt's spineflower (*Chorizanthe orcuttiana*)
- San Diego button-celery (*Eryngium aristulatum* var. *parishii*)
- Mexican flannelbush (*Fremontodendron mexicanum*)
- Willowy monardella (*Monardella viminea*)
- California Orcutt grass (*Orcuttia californica*)

¹ "OE" is a map-naming convention that stands for "Over Edge," meaning the quad for an area does not have a USGS quad number because the data are included on the adjoining map sheet.

² Species with an asterisk (*) are considered likely to occur in the study area and are discussed further in this document.



- San Diego mesa mint (*Pogogyne abramsii*)
- Otay Mesa mint (*Pogogyne nudiuscula*)
- Arroyo toad (*Anaxyrus californicus*)
- *Southwestern willow flycatcher (*Empidonax traillii extimus*)
- *Light-footed clapper rail (*Rallus longirostris levipes*)
- California least tern (*Sternula antillarum browni*)
- *Least Bell's vireo (*Vireo bellii pusillus*)
- *San Diego fairy shrimp (*Branchinecta sandiegonensis*)
- Pacific pocket mouse (*Perognathus longimembris pacificus*)
- Quino checkerspot butterfly (*Euphydryas editha quino*)
- Riverside fairy shrimp (*Streptocephalus woottoni*)

Federal Threatened Species

- San Diego thornmint (*Acanthomintha ilicifolia*)
- Encinitas baccharis (*Baccharis vanessae*)
- Thread-leaved brodiaea (*Brodiaea filifolia*)
- Otay tarplant (*Deinandra conjugens*)
- Spreading navarretia (*Navarretia fossalis*)
- California red-legged frog (*Rana draytoni*)
- Western snowy plover (coastal population) (*Charadrius alexandrinus nivosus*)
- *Coastal California gnatcatcher (*Polioptila californica californica*)
- Vernal pool fairy shrimp (*Branchinecta lynchi*)

Federal Candidate Species

- Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)

Of the above-listed species, the following 26 species are considered unlikely to occur within the study area and are therefore not discussed further in this document: San Diego ambrosia, Del Mar manzanita, coastal dunes milk-vetch, Nevin's barberry, salt marsh bird's-beak, Orcutt's spineflower, San Diego button-celery, Mexican flannelbush, willowy monardella, California Orcutt grass, San Diego mesa mint, Otay Mesa mint, San Diego thornmint, Encinitas baccharis, thread-leaved brodiaea, Otay tarplant, spreading navarretia, arroyo toad, California red-legged frog, California least tern, western snowy plover (coastal population), western yellow-billed cuckoo, pacific pocket mouse, vernal pool fairy shrimp, Riverside fairy shrimp, and quino checkerspot butterfly. No plant species listed or proposed as federally threatened or endangered were found during the focused surveys and none are expected to occur in the study area. A brief discussion is provided for each of these species below, with additional detail provided in Appendix C.



Plants

- San Diego ambrosia has a low potential to occur in the study area. Limited suitable clay soils occur within the study area; vernal pools are absent; and focused surveys were negative for this species.
- Del Mar manzanita is not expected to occur in the study area. This species was not detected during focused surveys and this shrub is likely to have been detected.
- Coastal dunes milk-vetch is not expected to occur in the study area. No suitable habitat exists for this species within the study area.
- Nevin's barberry is not expected to occur in the study area. The study area is outside the known elevation range for the species.
- Salt marsh bird's-beak is not expected to occur in the study area. No suitable habitat exists for this species within the study area.
- Orcutt's spineflower has a low potential to occur in the study area. This species is only recorded from 11 occurrences in San Diego County and the potentially suitable habitat—sandy sites and openings—in the study area are associated with disturbance. Additionally, this species was not observed during focused surveys.
- San Diego button-celery is not expected to occur in the study area. Suitable (vernal pool) microhabitat is lacking.
- Mexican flannelbush is not expected to occur in the study area. This shrub was not observed during focused surveys.
- Willow monardella is not expected to occur in the study area. The preferred microhabitat of rocky washes (Jepson, 2012) is marginal within the study area. In addition, focused surveys were negative.
- California Orcutt grass is not expected to occur in the study area. No suitable vernal pool habitat occurs within the study area.
- San Diego mesa mint is not expected to occur in the study area. No suitable vernal pool habitat occurs within the study area.
- Otay Mesa mint is not expected to occur in the study area. No suitable vernal pool habitat occurs within the study area.
- San Diego thornmint has a low potential to occur in the study area. Limited suitable clay soils occur within the study area; vernal pools are absent; and focused surveys were negative for this species.
- Encinitas baccharis is not expected to occur in the study area. The study area is outside of the species known elevation range.
- Thread-leaved brodiaea has a low potential to occur in the study area. Focused surveys targeted suitable habitat during peak blooming period; however, these survey results were negative.
- Otay tarplant has a low potential to occur in the study area. There are limited suitable clay soils within the study area and this species was not detected during focused surveys.



- Spreading navarretia has a low potential to occur in the study area due to the limited suitable freshwater marsh habitat present.

Animals

- Arroyo toad is not expected to occur in the study area. Although stream channels occur in the study area, the closest recorded location is approximately 14 miles to the southeast (CDFG, 2012a). In addition, the species is no longer known to occur within City of San Diego limits.
- California red-legged frog is not expected to occur in the study area. Suitable habitat exists in the study area within wetland areas; however, the closest recorded location for this species is approximately 48 miles to the northeast in Riverside County (CDFG, 2012a).
- California least tern has a low potential to occur in the study area, but is recorded in the general vicinity (CDFG, 2012a). This species has a moderate potential to breed at Mission Bay or San Diego Bay and may forage in shallow waters of Rose Creek, San Clemente Creek, Tecolote Creek, and San Diego River. No suitable nesting habitat occurs within the study area.
- Western snowy plover has a moderate potential to nest at Mission Bay and possibly use areas along the San Diego River. This species was recorded in the vicinity near San Diego Bay and north of the study area along the coast; however, these records are not recent (Unitt, 2004). No suitable nesting habitat occurs within the study area.
- Western yellow-billed cuckoo is not expected to occur due to lack of suitable large stands of riparian vegetation. This species was also not recorded in the vicinity (CDFG, 2012a).
- Pacific pocket mouse has a very low potential to occur within the study area. This species was recorded historically in the vicinity, however, it is assumed to be extirpated in southern San Diego County. Currently, this species is only known to occur in northern San Diego County and southern Orange County coastal areas.
- Vernal pool fairy shrimp is not expected to occur in the study area. Wet-season focused surveys conducted in 2010-2011, 2011-2012, and 2013-2014 were negative for this species. While suitable depressions were observed with evidence of clay soils and seasonal inundation, this species has not been recorded in the area.
- Riverside fairy shrimp is not expected to occur in the study area. Wet-season focused surveys conducted in 2010-2011, 2011-2012, and 2013-2014 were negative for this species. While suitable depressions were observed with evidence of clay soils and seasonal inundation, this species has not been recorded in the area.
- Quino checkerspot butterfly is not expected to occur in the study area. Although the species was likely historically present, the species is considered extirpated from this portion of its range by urban development.



1.2 Critical Habitat

No critical habitat for plant species listed as federally threatened or endangered occurs in the study area. In addition, no critical habitat for wildlife species listed as federally threatened or endangered, including coastal California gnatcatcher and San Diego fairy shrimp, occurs in the study area.

1.3 Consultation to Date

This document was prepared to support Section 7 consultation between the USFWS and the Federal Transit Administration (FTA) and its non-federal representative, the San Diego Association of Governments (SANDAG), for the Mid-Coast Corridor Transit Project located in San Diego, California (Figure 2-1). A brief summary of the consultation history is provided as follows.

25 February 2013—In cooperation with the FTA, SANDAG requested to initiate informal Section 7 consultation with the USFWS regarding the federally listed threatened coastal California gnatcatcher and the federally listed endangered least Bell's vireo, southwestern willow flycatcher, and San Diego fairy shrimp. The request included pertinent project information and presented the basis for the preliminary finding made by the FTA and SANDAG that the project may affect, but is not likely to adversely affect, the four species for which Section 7 consultation was originally requested. Upon receipt of the initial consultation request, Ms. Lauren Kershek was identified as the USFWS contact.

20 March 2013—Ms. Kershek contacted SANDAG to request additional project-related information and subsequently indicated that the USFWS did not anticipate any difficulties in proceeding with the informal Section 7 consultation. At SANDAG's request, Ms. Kershek agreed to keep the consultation open until the *Draft Supplemental Environmental Impact Statement and Subsequent Environmental Impact Report* (SEIS/SEIR) (SANDAG, 2013a) was circulated for public review to ensure that any concerns regarding the project were adequately addressed.

27 March 2013—SANDAG provided the requested project-related information to Ms. Kershek via e-mail and ftp transmittal. Information included the project description and documentation of the proposed off-site mitigation areas.

17 May through 17 July, 2013—The Draft SEIS/SEIR and supporting technical reports were circulated for a 60-day public review and comment period.

7 November 2013—SANDAG spoke with Ms. Kershek to provide information to the USFWS regarding the current status of the project. Topics addressed included the close of the Draft SEIS/SEIR comment period, incorporation of refinements to the project engineering design, ongoing efforts to respond to comments received, and efforts to update the *Mid-Coast Corridor Transit Project Biological Resources Technical Report* (SANDAG, 2013e). Ms. Kershek expressed support for the identified mitigation sites. At that time, Ms. Kershek indicated that the federally listed endangered light-footed clapper rail had been reported in the San Diego River and that the informal Section 7 consultation should address potential impacts to this species. In addition, Ms. Kershek



also requested that two occurrences of special-status plant species recorded in the California Natural Diversity Database in the San Diego River be investigated if focused plant surveys had not already been conducted for them. The first dates from around the 1930s and is for Brand's phacelia (*Phacelia stellaris*). The next is also an older record for San Diego ambrosia.

22 January 2014—At SANDAG's request, Ms. Kershek provided a summary of the Section 7 consultation to date. Ms. Kershek provided an e-mail describing the activities listed above. Ms. Kershek also stated that she had confirmed that the San Diego ambrosia population that used to occur in the San Diego River has likely been extirpated. In addition, she stated that the USFWS has released a listing decision regarding Brand's phacelia which determined that listing is not warranted; therefore, it is no longer a candidate species and does not need to be addressed in the Section 7 consultation. The population that historically occurred in the San Diego River has also likely been extirpated. The e-mail indicated that an informal Section 7 consultation is appropriate, and that the FTA will need to request consultation in writing or designate SANDAG as their non-federal representative.

30 April 2014—SANDAG and FTA Region IX held a conference call with Ms. Kershek to discuss the positive survey findings during the 2013-2014 San Diego fairy shrimp protocol surveys and the anticipated need for a formal Section 7 consultation. Ms. Kershek agreed that a formal consultation would be appropriate.

6 May 2014—SANDAG and FTA Region IX participated in a field visit with Ms. Kershek and Ms. Susan Wynn of USFWS to review the San Diego fairy shrimp impact location and the proposed mitigation site. USFWS indicated approval of the proposed mitigation location, the Anderprizes Property in Otay Mesa, California.

2.0 DESCRIPTION OF THE PROPOSED ACTION

This chapter describes the location of the Mid-Coast Corridor Transit Project, including existing site conditions. The chapter concludes with an overview of the project, including the alignment, stations, vehicle and power requirements, and the operating plan.

2.1 Project Location

The Mid-Coast Corridor Transit Project is located in San Diego, California. The Mid-Coast Corridor is the area centering on Interstate (I-) 5 and extending from Downtown San Diego on the south to University of California, San Diego (UCSD) and University City on the north. Located entirely within the City of San Diego, the corridor is bounded by the Pacific Ocean on the west and by I-805 and State Route (SR) 163 on the east. The Mid-Coast Corridor Transit Project alignment is shown on Figure 2-1.

2.2 Existing Site Conditions

This section describes the existing site conditions within the study area for the biological resources analysis, including surrounding land uses, soils, terrain, vegetation communities, and Waters of the U.S.

2.2.1 Study Area and Surrounding Land Uses

The biological resources study area generally includes all areas within 500 feet of the project alignment from Old Town Transit Center (OTTC) north to University Towne Centre (UTC). For special-status plants and jurisdictional resources, the study area is limited to areas within 100 feet of the project alignment. The study area consists of the Metropolitan Transit System (MTS) right-of-way; the I-5 right-of-way; public streets; and the UCSD campus; including disturbed and developed lands; and native and non-native upland, riparian, and wetland vegetation communities. Land uses within and adjacent to the study area include single- and multi-family residential, commercial, school, park (including designated open space park or preserve), and transportation uses, as described in more detail in the *Mid-Coast Corridor Transit Project Land Use Impacts Technical Report* (San Diego Association of Governments [SANDAG], 2013d).

The Mid-Coast Corridor is characterized by dense urban centers and an abundance of regional activity centers and other major trip generators. Dense population and employment centers currently anchor both the northern and southern ends of the Mid-Coast Corridor. The UCSD campus, the Westfield UTC shopping center, and regional hospitals are clustered in the north part of the corridor and represent the second most dense land uses in the county. At the south end of the corridor is the region's only identified Metropolitan Center—Downtown San Diego—with the region's densest land uses and high-rise development.



Figure 2-1. Mid-Coast Corridor Transit Project



Source: SANDAG, 2014



2.2.2 Soils

Eighteen soil types representing 11 soil series occur in the study area (Bowman, 1973), and are depicted in Figure 2-2 and listed in Table 2-1. Huerhuero is the most common soil series in the study area. As indicated in Table 2-1, 7 of the 18 soil types have been identified as suitable substrates for special-status plant taxa (designated by an asterisk) in the Multiple Habitat Conservation Program (AMEC et al., 2003), which covers North San Diego County cities, but is also applicable to this soil characterization for special-status plants in the study area.

Table 2-1. Mapped Soil Series and Units in the Special-Status Plant Survey Area

Soil Series	Soil Unit
Altamont	Altamont clay, 15% to 30% slopes, eroded*
	Altamont clay, 30% to 50% slopes*
Carlsbad	Carlsbad-Urban land complex, 2% to 9% slopes
Chesterton	Chesterton fine sandy loam, 2% to 5% slopes*
	Chesterton fine sandy loam, 5% to 9% slopes*
	Chesterton-Urban land complex, 2% to 9% slopes
Corralitos	Corralitos loamy sand, 0% to 5% slopes*
Gaviota	Gaviota fine sandy loam, 30% to 50% slopes
	Gaviota fine sandy loam, 9% to 30% slopes
Huerhuero	Huerhuero loam, 15% to 30% slopes, eroded*
	Huerhuero loam, 9% to 15% slopes, eroded*
	Huerhuero-Urban land complex, 2% to 9% slopes
	Huerhuero-Urban land complex, 9% to 30% slopes
Lagoon water	Lagoon water
Made land	Made land
Salinas	Salinas clay loam, 2% to 9% slopes
Terrace escarpments	Terrace escarpments
Urban land	Urban land

Source: Bowman, 1973

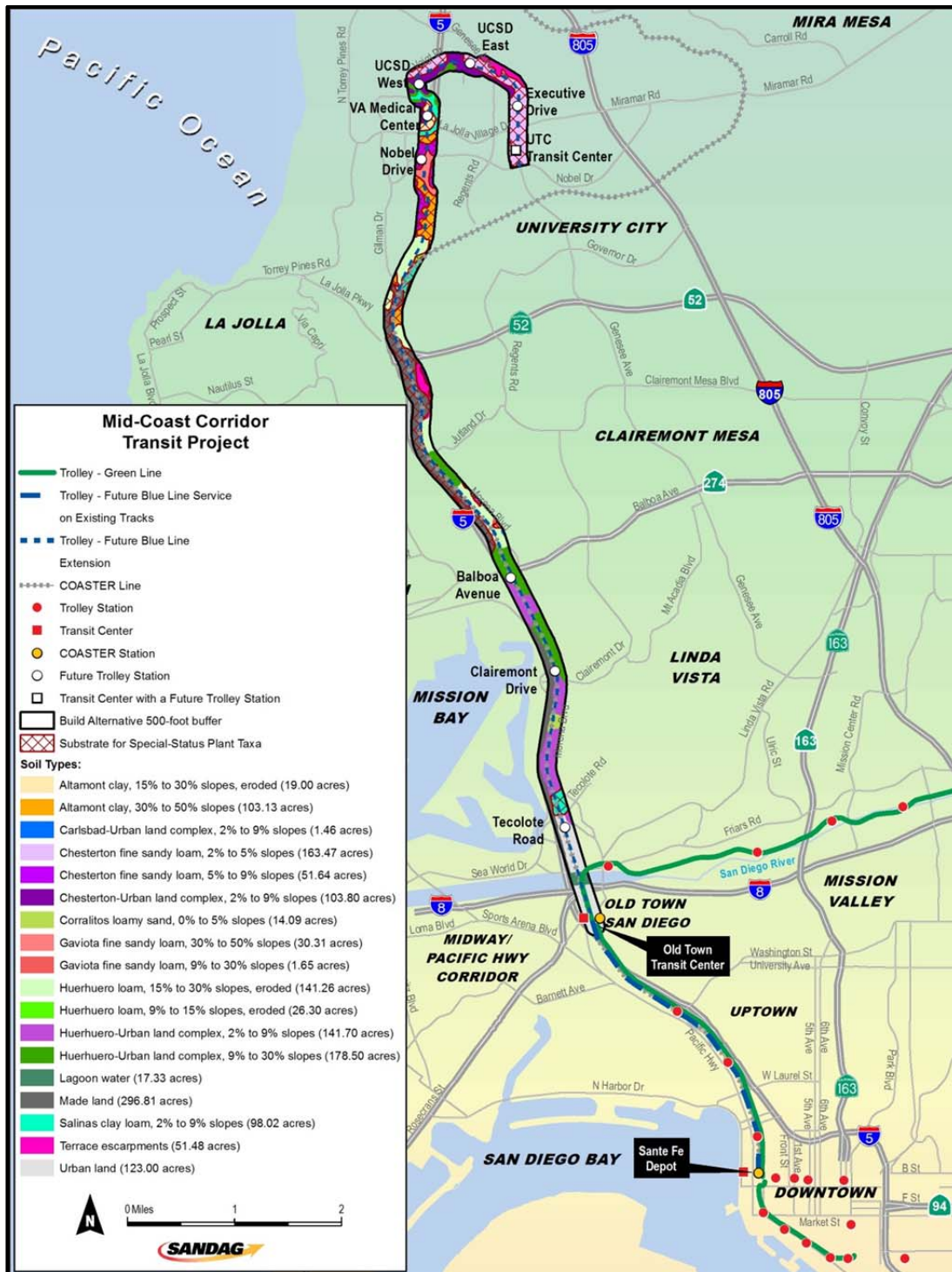
Note: *Soil types within the indicated soil series have been identified as substrate for special-status plant taxa (AMEC et al., 2003).

2.2.3 Terrain

The Mid-Coast Corridor is topographically diverse, with terrain ranging from coastal beaches and bays to inland areas containing steep hillsides and narrow canyons. The lowest elevations on site occur at the southern end of the study area where the San Diego River lies at approximately 9 feet above mean sea level. The highest elevations are at the north end of the study area in La Jolla, where elevations at UCSD and University City range from approximately 320 to 360 feet above mean sea level. In addition to the San Diego River, two other surface waters traverse the study area: Tecolote Creek, which empties into Mission Bay approximately 700 feet to the west of the project, and Rose Creek, which parallels a substantial portion of the project alignment from approximately Balboa Avenue north to La Jolla Colony Drive.



Figure 2-2. Soils Map



Sources: U.S. Department of Agriculture, 2010b; SANDAG, 2014; San Diego Geographic Information Source (SanGIS), 2011



The southern portion of the study area is generally characterized by the moderate, west-facing slopes of Clairemont overlooking Mission Bay, with Mission Valley and the San Diego River located to the south (Figure 2-3). Rose Canyon is the most prominent natural feature in the northern portion of the study area. The upper portion of Rose Canyon near La Jolla Colony Drive generally trends in an east–west direction, while San Clemente Canyon to the south also runs east–west and includes the SR 52 corridor.

2.2.4 Vegetation Communities

Twenty-four vegetation communities and land covers (including disturbed forms) were mapped in the study area and include 20 native or naturalized vegetation types and 4 non-native land covers, as described below and presented in Table 2-2. Native marsh, riparian, and wetland communities are associated with the San Diego River and Rose Creek, though small patches occur in relatively urbanized situations on the UCSD campus. Marsh, riparian, and wetland vegetation types include cismontane alkali marsh, coastal and valley freshwater marsh (including disturbed), herbaceous wetlands (including disturbed), southern riparian forest (including disturbed), southern coast live oak riparian forest, southern arroyo willow riparian forest, southern riparian scrub, mulefat scrub, southern willow scrub (including disturbed), Arundo-dominated riparian, and non-vegetated channel or floodway. Disturbed wetlands also occur throughout the study area, and primarily include concrete-lined portions of Rose Creek and Tecolote Creek. Native uplands consist primarily of coastal sage scrub and disturbed coastal sage scrub. The majority of coastal sage scrub vegetation occurs on west-facing slopes above I-5 to the north and south of SR 52, with limited areas also occurring on the UCSD campus. The majority of disturbed coastal sage scrub occurs within or adjacent to the existing MTS right-of-way and consists of narrow, fragmented slivers of vegetation that are not contiguous with the larger habitat areas. Non-native grassland is present throughout the study area, primarily alongside the existing MTS right-of-way north of Garnet Avenue and in transitional areas adjacent to Rose Creek. Eucalyptus woodland also occurs throughout the study area along the existing MTS right-of-way south of Balboa Avenue, along the east side of I-5 north of La Jolla Colony Drive, and on the UCSD campus. Urban/Developed and associated Ornamental areas are the most common land cover types in the study area.



Figure 2-3. Topography



Sources: Parsons Brinckerhoff, 2008; Esri, 2012



Table 2-2. Vegetation Communities and Land Covers

General Vegetation Community/Land Cover Category	General Vegetation Type (Holland/Oberbauer Code)	Acres	% of Site
Disturbed and Developed Areas (10000)	Disturbed Wetland (11200)	11.5	0.70%
	Disturbed Habitat (11300)	57.3	3.70%
	Ornamental (N/A)	117.9	7.50%
	Urban/Developed (12000)	1,092.20	69.90%
Disturbed and Developed Areas Total		1,278.90	81.90%
Scrub and Chaparral (30000)	Diegan Coastal Sage Scrub (32500)	71.1	4.60%
	Disturbed Diegan Coastal Sage Scrub (32500)	36.4	2.30%
	Southern Mixed Chaparral (37120)	4.5	0.30%
Scrub and Chaparral Total		112	7.20%
Grasslands, Vernal Pools, Meadows, and Other Herb Communities (40000)	Non-Native Grassland (42200)	28.6	1.80%
Grasslands, Vernal Pools, Meadows, and Other Herb Communities Total		28.6	1.80%
Bog and Marsh (50000)	Cismontane Alkali Marsh (52310)	1.4	0.10%
	Coastal and Valley Freshwater Marsh (52410)	0.5	<0.1%
	Disturbed Coastal and Valley Freshwater Marsh (52410)	<0.01	<0.1%
	Herbaceous Wetland (52510)	0.3	<0.1%
	Disturbed Herbaceous Wetland (52510)	0.1	<0.1%
Bog and Marsh Total		2.3	0.10%
Riparian and Bottomland Habitat (60000)	Southern Riparian Forest (61300)	48	3.10%
	Disturbed Southern Riparian Forest (61300)	2	0.10%
	Southern Coast Live Oak Riparian Forest (61310)	2.9	0.20%
	Southern Arroyo Willow Riparian Forest (61320)	0.2	<0.1%
	Southern Riparian Scrub (63300)	1.4	0.10%
	Mulefat Scrub (63310)	1.2	0.10%
	Southern Willow Scrub (63320)	8.8	0.60%
	Disturbed Southern Willow Scrub (63320)	7.7	0.50%
	Arundo-Dominated Riparian (65100)	1.1	0.10%
	Non-Vegetated Channel or Floodway (64200)	3	0.20%
Riparian and Bottomland Habitat Total		76.3	4.90%
Woodland (70000)	Eucalyptus Woodland (79100)	63.7	4.10%
Woodland Total		63.7	4.10%
Total		1,561.80	100.00%

Sources: Holland, 1986; Oberbauer et al., 2008



2.2.5 Waters of the U.S.

A wetland delineation was conducted by Dudek biologists in February and March 2011. The delineation included all areas within a 100-foot buffer of the alignment. Table 2-3 lists acreages for Waters of the U.S., including wetlands, within the study area and under the jurisdiction of the U.S. Army Corps of Engineers. The results of the jurisdictional delineation are subject to confirmation with the U.S. Army Corps of Engineers, which is expected to occur as part of the permitting process. Wetlands and non-wetland Waters of the U.S. in the San Diego River and Rose Creek include suitable riparian habitat for least Bell's vireo and southwestern willow flycatcher. Wetlands and non-wetland Waters of the U.S. in the San Diego River include suitable riparian habitat for light-footed clapper rail.

Table 2-3. Waters of the U.S. in the Study Area by Vegetation Community

Waters of the U.S.	Acres
Wetlands	
Disturbed Wetland (11200)	6.58
Coastal and Valley Freshwater Marsh (52410)	0.10
Disturbed Coastal and Valley Freshwater Marsh (52410)	0.01
Herbaceous Wetland (52510)	0.01
Southern Riparian Forest (61300)	2.40
Disturbed Southern Riparian Forest (61300)	0.01
Mulefat Scrub (63310)	0.51
Southern Willow Scrub (63320)	2.65
Disturbed Southern Willow Scrub (63320)	1.09
Arundo-Dominated Riparian (65100)	0.08
Total Wetlands	13.45
Non-Wetland Waters	
Unvegetated Waters	0.25
Non-Vegetated Channel or Floodway (64200)	1.32
Total Non-Wetland Waters	1.57
Total Wetland and Non-Wetland Waters	15.02

Source: SANDAG, 2013

2.3 Proposed Action

The project consists of extending the existing San Diego Trolley (Trolley) Blue Line from the Santa Fe Depot north via the existing Trolley tracks to the OTTC, and then north along new tracks to the UTC Transit Center in University City, with nine new stations at Tecolote Road, Clairemont Drive, Balboa Avenue, Nobel Drive, UCSD West Campus, UCSD East Campus, Veterans Administration (VA) Medical Center, Executive Drive, and the UTC Transit Center (Figure 2-1). Construction is assumed to begin in early 2016, and revenue service is expected to start by the spring of 2019. This section describes the project, including minor modifications to bus services to improve access to stations and eliminate duplication of service with the extension of the Trolley Blue Line.

The Mid-Coast Corridor Transit Project provides for the extension of the Trolley Blue Line from the Santa Fe Depot in Downtown San Diego to the UTC Transit Center in University City. With the extension of the Trolley Blue Line, construction of the project would provide for continuous service on the Trolley Blue Line from the San Ysidro Transit Center at the U.S.–Mexico International Border to University City.

Figure 2-1 shows the project alignment and station locations. The project would use the existing Trolley tracks for approximately 3.5 miles, from the Santa Fe Depot to a point just north of the OTTC and south of the San Diego River. The Trolley Blue Line trains would share the tracks with the Trolley Green Line trains. North of this point, the project includes construction of 10.9 miles of new double track extending to the terminus at the UTC Transit Center in University City.

In addition, the project includes upgrades to existing systems facilities between the Santa Fe Depot and the OTTC, and the acquisition of new Trolley vehicles for the extended project operation.

2.4 Definition of Action Area

The project action area can generally be described as the linear railway corridor with adjoining or adjacent areas for stations, park-and-ride facilities, and power system and signaling. The follow sections describe the project alignment, operation plans, and traction power substations (TPSS) in more detail.

2.4.1 Alignment

The project alignment would follow the Los Angeles—San Diego—San Luis Obispo Rail Corridor Agency (LOSSAN) tracks within the existing MTS and City of San Diego right-of-way from the Santa Fe Depot to approximately 3,500 feet south of the I-5/Gilman Drive/La Jolla Colony Drive interchange. The alignment would then leave the LOSSAN right-of-way, enter California Department of Transportation (Caltrans) right-of-way, and parallel the east side of the I-5 corridor north to the I-5/Gilman Drive/La Jolla Colony Drive interchange. North of the interchange, the alignment would parallel the I-5 corridor, traveling partially within Caltrans right-of-way and partially on private property. At about 2,500 feet south of Nobel Drive, the alignment would transition to an aerial structure and cross over to the west side of I-5 south of Nobel Drive. From Nobel Drive, the alignment would continue north to the UCSD West Campus, then cross back over to the east side of I-5 along the south side of Voigt Drive and terminate on Genesee Avenue at the UTC Transit Center. The alignment's total length from the south side of the San Diego River to the terminus at the UTC Transit Center is 10.9 miles.

Figure 2-4 presents a conceptual plan and profile drawing of the project alignment, stations, and supporting facilities. The *Mid-Coast Corridor Transit Project Property Acquisitions Technical Report* (SANDAG, 2013b) identifies property acquisitions and structures to be demolished as part of the project. The *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2013c) describes the construction methods, activities, and durations.

North of the OTTC, the project alignment would be located primarily at grade within the existing MTS right-of-way, north to the vicinity of Gilman Drive/La Jolla Colony Drive. This railroad corridor is used by the COASTER commuter rail, Amtrak intercity rail, and

Burlington Northern Santa Fe freight rail. The project alignment would be located east of the existing LOSSAN tracks, from the OTTC to south of SR 52, with at-grade stations at Tecolote Road, Clairemont Drive, and Balboa Avenue.

The project alignment would use bridges to cross the San Diego River, Tecolote Creek, and Rose Creek, and would be grade separated over Friars Road and Balboa Avenue. South of SR 52, the alignment would transition to an aerial structure and would cross the existing LOSSAN tracks, continuing at grade west of the existing LOSSAN tracks. To accommodate the alignment along the westerly right-of-way, the existing LOSSAN tracks would be relocated east but would still be located within the MTS right-of-way. Just south of Gilman Drive/La Jolla Colony Drive, the alignment would leave the MTS right-of-way and enter the I-5 right-of-way. Along the I-5 corridor, the project alignment would be designed so as not to preclude the future widening of I-5.

Upon entering the I-5 right-of-way north of SR 52, the project alignment would extend at grade along the east side of I-5, crossing under La Jolla Colony Drive in an approximately 200-foot-long cut-and-cover underpass. North of that underpass, the alignment would continue at grade along the east side of I-5, generally within or adjacent to the I-5 right-of-way to Charmant Drive. The alignment would then cross over two canyons along the east side of I-5 and west of Charmant Drive and transition to an aerial structure to cross to the west side of I-5, south of Nobel Drive. The aerial alignment would continue north along the west side of I-5 to an aerial station at La Jolla Village Square (Nobel Drive Station).

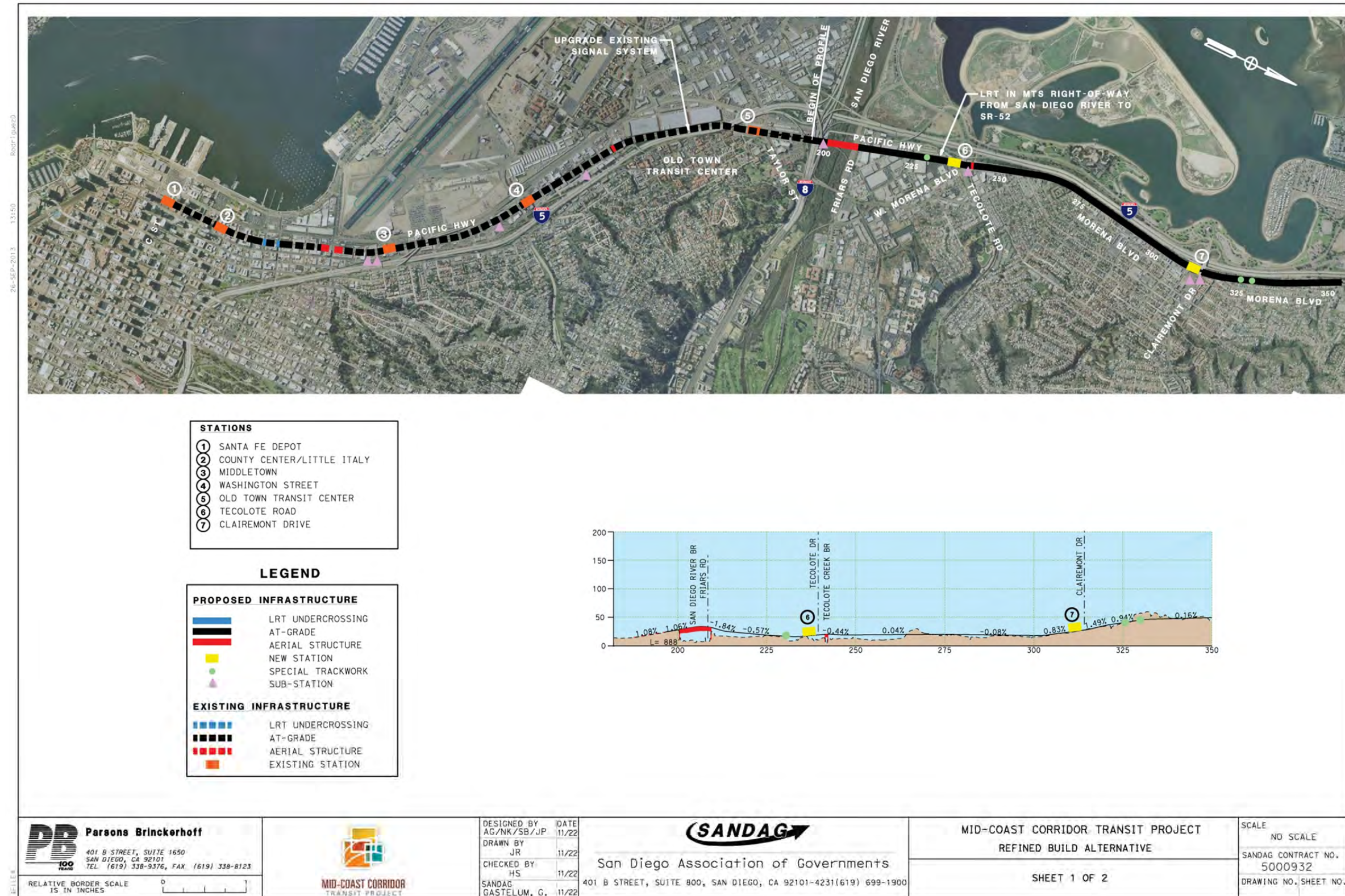
Continuing north from the Nobel Drive Station, the project alignment would remain on an aerial structure, travel for approximately 160 feet along the southeast corner of the shopping center on the north side of Nobel Drive, then enter the I-5 right-of-way and travel along the west side of I-5 within the I-5 right-of-way. It would return to grade just north of the I-5/La Jolla Village Drive interchange. North of this interchange, the alignment would run at-grade for approximately 470 feet along the west side of I-5 and the east side of the VA Medical Center. An at-grade station would be located at the VA Medical Center. The station would be within the I-5 right-of-way, with access provided from the VA Medical Center property.

South of Gilman Drive, the project alignment would transition back to an aerial structure and enter the UCSD West Campus, crossing Gilman Drive and the surface parking lot located north of Gilman Drive on the UCSD campus. The aerial alignment would then cross Pepper Canyon and continue to an aerial station on the UCSD West Campus.

North of the UCSD West Station, the project alignment would turn east on an aerial structure on the UCSD campus and cross to the north side of Voigt Drive. The aerial alignment would then proceed east and cross back over Voigt Drive to the northeastern corner of Warren Field and across Gilman Drive along the south side of the future Voigt Drive bridge proposed as part of the Caltrans I-5 North Coast Corridor Project.

The I-5 North Coast Corridor Project proposes to construct HOV direct access ramps that connect to the north side of Voigt Drive. Construction of the direct access ramps is scheduled for completion by 2020. No major modifications to I-5 would be required to accommodate the crossing. As part of the I-5 North Coast Corridor Project, Caltrans

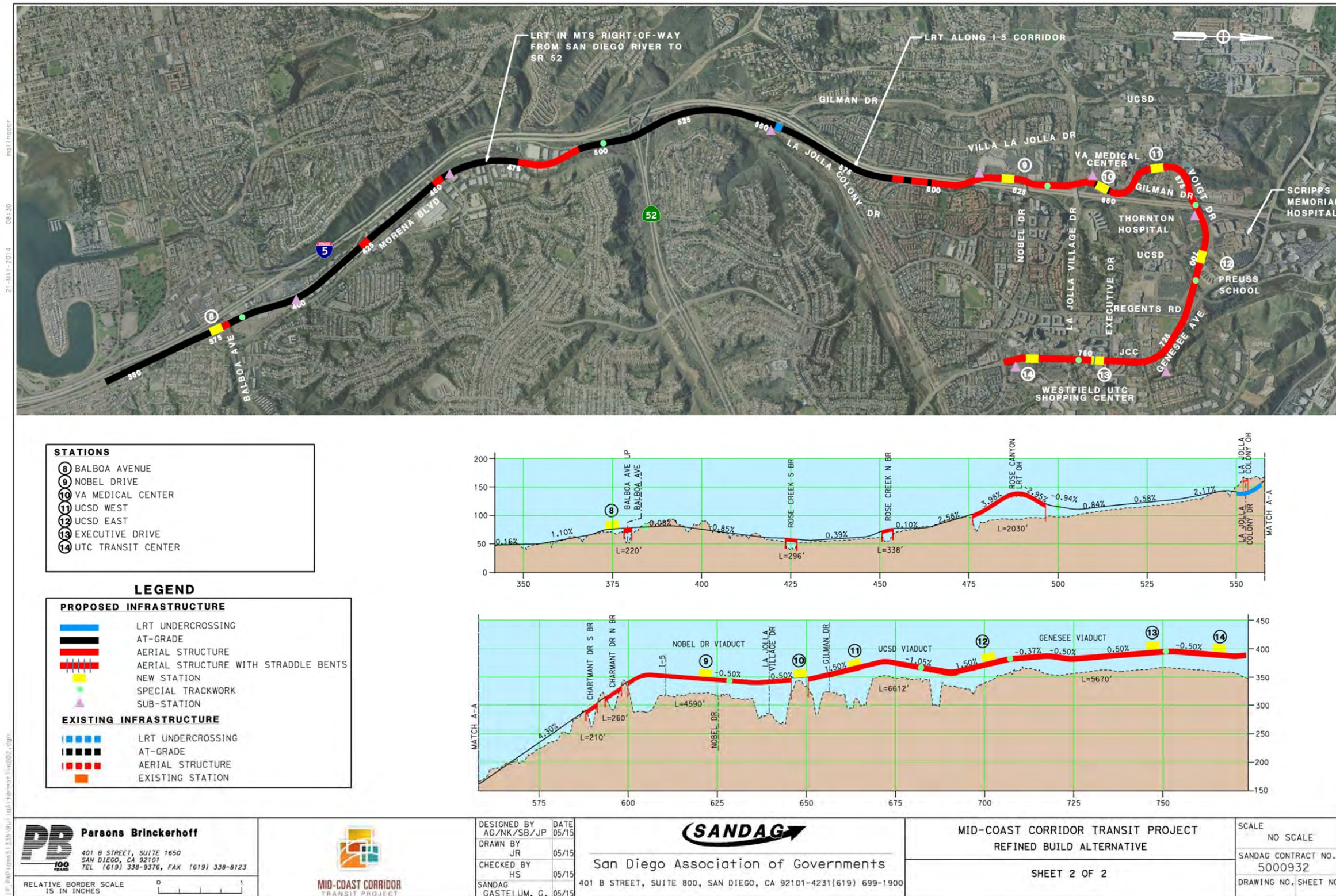
Figure 2-4. Conceptual Plan and Profile of Mid-Coast Corridor Transit Project



Source: SANDAG, 2014

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Figure 2-4. Conceptual Plan and Profile of Mid-Coast Corridor Transit Project (continued)



Source: SANDAG, 2014

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proposes to realign Voigt Drive to connect to Genesee Avenue and realign Campus Point Drive to connect to Voigt Drive. Voigt Drive is located on UCSD property. The Mid-Coast Corridor Transit Project's alignment would be located so as not to preclude the realignment of Voigt Drive and Campus Point Drive.

After crossing I-5, the project alignment would continue east along the south side of Voigt Drive, and to the north of the existing UCSD baseball field. The aerial alignment would continue across the future realigned Campus Point Drive at Voigt Drive and across Voigt Drive to Genesee Avenue, where it would enter the street right-of-way. The UCSD East Station spans the future realigned Campus Point Drive. The aerial alignment would enter the Genesee Avenue right-of-way just west of Regents Road and continue south on an aerial structure in the median of Genesee Avenue, following the existing alignment of Genesee Avenue to a station at Executive Drive, and a terminal station at the UTC Transit Center.

Under the project, the support columns generally would be located in the center of the Genesee Avenue median. The project would require two straddle bents along Genesee Avenue. The first straddle bent would be located west of Regents Road where the alignment would enter Genesee Avenue at an angle. The second one would be located on Genesee Avenue at the Executive Square intersection. The straddle bents would have support columns either in the median of Genesee Avenue, along the south side of Genesee Avenue, or in the median of Executive Square. The remaining support columns would be spaced at approximately 125 to 210 feet apart. Localized widening of Genesee Avenue would be required to accommodate the support columns with necessary clearances and to maintain the number of existing traffic lanes, as well as to accommodate the stations at Executive Drive and the UTC Transit Center.

2.4.2 Stations

The project includes nine new stations for passenger access. All new stations would be side-platform stations with 360-foot-long platforms designed to accommodate up to four-car trains. All platforms would be fully accessible and comply with the Americans with Disabilities Act. Parking and bus transfer facilities would be provided at five stations. Lighting would be provided at all station platforms and parking areas. No public restrooms would be provided at any of the stations.

The new project stations include both at-grade and aerial stations. The project segment along the MTS right-of-way between the San Diego River crossing and Gilman Drive would include three at-grade stations at Tecolote Road, Clairemont Drive, and Balboa Avenue.

The project segment along the I-5 corridor between Gilman Drive and the alignment crossing of I-5 at Voigt Drive would include an aerial station at Nobel Drive, an at-grade station at the VA Medical Center, and an aerial station on the UCSD West Campus.

The project segment east of I-5, along Voigt Drive, would include an aerial station on the UCSD East Campus west of Campus Point Drive, serving both the UCSD East Campus and Scripps Hospital. Along Genesee Avenue, the project would include aerial stations at Executive Drive and at the UTC Transit Center.

2.4.3 Trolley Vehicle Fleet and Maintenance Facilities

The Trolley Blue Line extension would require 36 new light rail vehicles (LRVs) to cover peak-period service with spares in 2030. In the opening year of revenue service, 25 of the 36 new LRVs would be required.

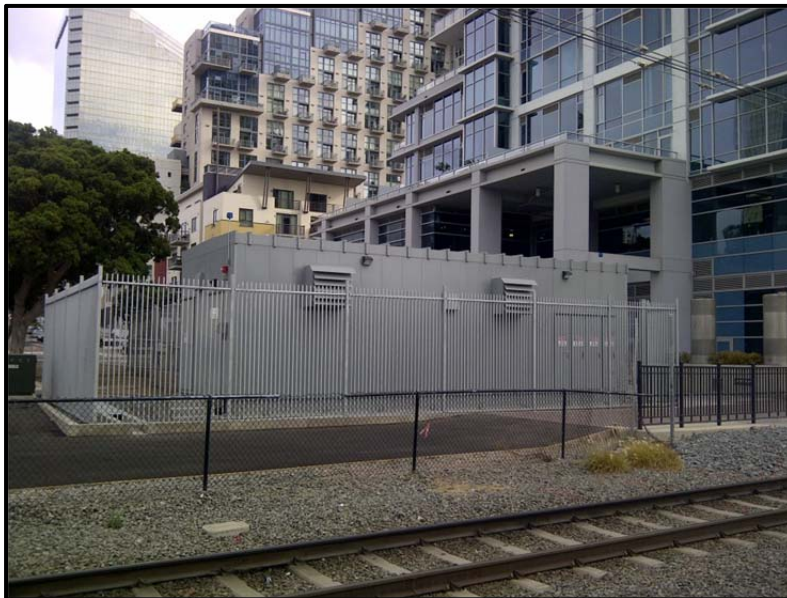
The MTS maintenance plan for LRVs, including those for the project, centralizes all functions at the existing maintenance facilities located at 1255 Imperial Avenue in Downtown San Diego. No expansion of existing maintenance facilities would be required for the project.

2.4.4 Power System and Signaling

The LRVs would receive electrical power from overhead contact wires. Catenary support poles, approximately 25 feet high, would be located at approximately 150- to 180-foot intervals. The catenary poles generally would be located in the center of the project alignment. In some locations, the poles would be located on both sides of the Trolley tracks. The overhead electrical power lines would be suspended above the Trolley tracks.

Electricity to power the LRVs would be provided by TPSSs. The TPSSs would be of similar size and design to the existing substations used on the Trolley Green Line. Typical TPSS dimensions would be a 40-foot by 15-foot unmanned equipment enclosure within a 45-foot by 75-foot fenced site. Figure 2-5 shows an example of an existing TPSS.

Figure 2-5. Existing Traction Power Substation at a Street North of Santa Fe Depot



Source: SANDAG, 2013

The extension of the Trolley Blue Line service from Santa Fe Depot to the UTC Transit Center would require 16 TPSSs, consisting of 4 new or upgraded substations between Santa Fe Depot and the OTTC and 12 new substations north of the OTTC.



Between Santa Fe Depot and the OTTC, replacement or upgrades to two existing TPSS locations on Olive Street and on Bean Street and two new substations would be required because of the increased frequency of Trolley service and the higher power draw of the new vehicles. One of the new substations is a second substation to the existing site at Olive Street and the other is a new substation within the existing MTS Wright Street Yard south of the OTTC. The remaining 12 new substations would be located north of the OTTC. Table 2-4 identifies the location of the existing substations and the proposed substation upgrades between Santa Fe Depot and the OTTC, and the proposed new substations north of the OTTC.

Table 2-4. Traction Power Substations Locations

No.	Stationing	Location
1	64+50	Replacement of an existing substation located along the east side of the right-of-way at Olive St
2	64+50	Addition of a second new substation at Olive St
3	101+36	Replacement of an existing substation at Bean St
4	129+50	New substation at Wright St. Yard within existing MTS property
5	199+50	New substation south of the San Diego River and north of I-8, in City of San Diego right-of-way
6	241+00	New substation at Tecolote Rd Station along east side of tracks and south of Tecolote Creek
7	313+25	New substation at Clairemont Dr. Station parking lot
8	313+25	New substation at Clairemont Dr Station parking lot
9	401+25	New substation north of Balboa Ave within City Yard
10	456+00	New substation just north of Jutland Dr on undeveloped parcel east of MTS right-of-way
11	550+00	New substation south of La Jolla Colony Dr on the east side of I-5
12	612-10	New substation on the west side of I-5 in Caltrans right-of-way towards the southern end of the La Jolla Village Square shopping center
13	645+50	New substation in Caltrans right-of-way next to VA Medical Center
14	687+00	New substation on east side of I-5 and west of the UCSD baseball field
15	731+10	New substation on SDG&E property located at the terminus of Fez St
16	771+00	New substation on Westfield UTC property north of Nobel Dr

Source: SANDAG, 2014

Notes: Caltrans = California Department of Transportation; I - = Interstate; MTS = Metropolitan Transit System; SDG&E = San Diego Gas & Electric; UCSD = University of California, San Diego; UTC = University Towne Centre; VA = Veterans Administration

Communications and signaling (C&S) buildings centralize train control and communications for Trolley operations at each station. Upgrades to the existing C&S system between the Santa Fe Depot and the OTTC would be required as part of the project; however, this would not require additional C&S buildings.

Other proposed physical improvements to the Trolley system south of the OTTC and north of Santa Fe Depot would include upgrades to existing systems, including the signaling system and the overhead catenary system to accommodate all-day 7.5-minute Trolley Blue Line service. These potential improvements would be located within the existing railroad and MTS right-of-way.

2.4.5 Operating Plan

Operating plans were developed using ridership forecasts. These operating plans were then used to develop the capital and operating cost estimates and to provide the basis for the analysis of potential project impacts.

Table 2-5 presents the existing 2010 Trolley operating plan and the Trolley operating plans developed for the opening year and 2030 revenue service. The 2030 operating plan for the No-Build Alternative is included for comparative purposes. Currently, the Trolley Blue Line operates from approximately 4:00 a.m. until 2:00 a.m. the next day. Hours of service for the Trolley Blue Line under the Refined Build Alternative would be similar to existing service.

Table 2-5. Trolley Operating Plans

Route	Peak Frequency (6:00 to 9:00 a.m.) (3:00 to 6:00 p.m.)	Off-Peak Frequency (9:00 a.m. to 3:00 p.m.)	Vehicle Type	Fare (each way)
2010 Operating Plan (Existing Conditions)				
Trolley Green Line Santee Town Center to OTTC	15.0	15.0	Trolley	\$2.50
Trolley Blue Line San Ysidro Transit Center to OTTC	7.5	15.0	Trolley	\$2.50
Trolley Orange Line Gillespie Field to 12th and Imperial Transit Center	15.0	15.0	Trolley	\$2.50
2010 Operating Plan (Refined Build Alternative)				
Trolley Green Line Santee Town Center to OTTC	15.0	15.0	Trolley	\$2.50
Trolley Blue Line San Ysidro Transit Center to UTC Transit Center	7.5	7.5	Trolley	\$2.50
Trolley Orange Line Gillespie Field to 12th and Imperial Transit Center	15.0	15.0	Trolley	\$2.50
Opening Year Operating Plan*				
Trolley Green Line Santee Town Center to 12th and Imperial Transit Center	15.0	15.0	Trolley	\$2.50
Trolley Blue Line San Ysidro Transit Center to America Plaza	7.5	15.0	Trolley	\$2.50
Trolley Blue Line America Plaza to UTC Transit Center	15.0	15.0	Trolley	\$2.50
Trolley Orange Line Gillespie Field to Santa Fe Depot	15.0	15.0	Trolley	\$2.50
2030 Operating Plan (Refined Build Alternative)				
Trolley Green Line Santee Town Center to 12th and Imperial Transit Center	15.0	15.0	Trolley	\$2.50
Trolley Blue Line San Ysidro to UTC Transit Center	7.5	7.5	Trolley	\$2.50
Trolley Orange Line Gillespie Field to America Plaza	15.0	15.0	Trolley	\$2.50

Source: SANDAG, 2012

Notes: *The Trolley Blue Line would operate as a continuous run from the San Ysidro Transit Center to the UTC Transit Center. During peak periods in the opening year, alternating trains would turn back at America Plaza, resulting in 15-minute headways north of America Plaza and 7.5-minute headways south of America Plaza.

OTTC = Old Town Transit Center; UTC = University Towne Centre



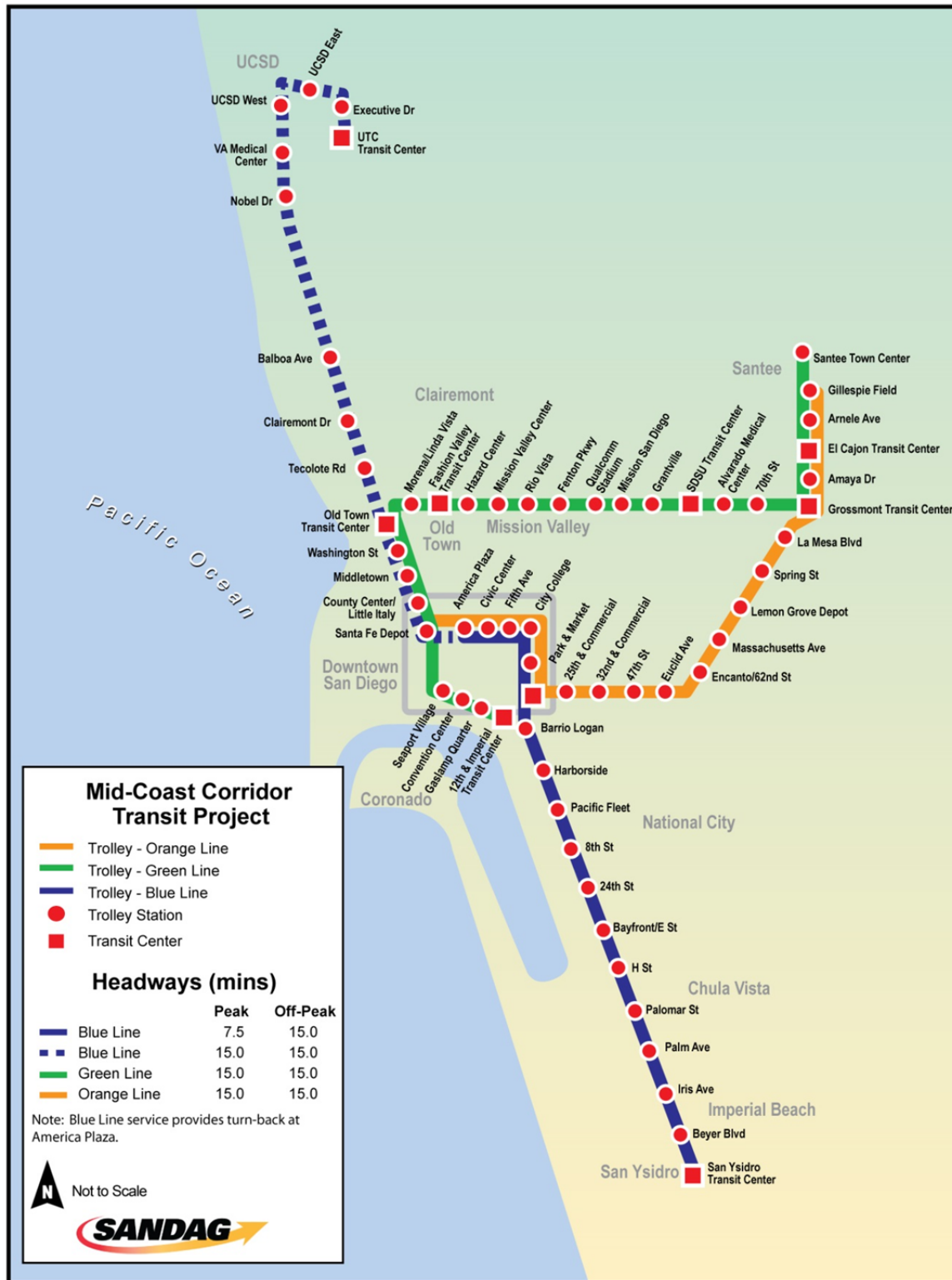
At the startup of revenue operations, the project is expected to require 15-minute service during peak and off-peak periods. Figure 2-6 shows the operating plan for the opening year of service.

The proposed Trolley operating plan for the Refined Build Alternative in 2030 presented in Table 2-5 includes the extension of the Trolley Blue Line to the UTC Transit Center. As shown in Figure 2-7, the Trolley Blue Line in 2030 would be operated as a single line with three-car trains from the existing San Ysidro Transit Center in the south to the UTC Transit Center in University City, with stops at all 29 intermediate stations. Weekday Trolley Blue Line service in 2030 would operate every 7.5 minutes during peak periods (i.e., 6:00 to 9:00 a.m. and 3:00 to 6:00 p.m.) and during the off-peak midday period (i.e., 9:00 a.m. to 3:00 p.m.). Service during the early morning and evening hours would be less frequent.

With extension of Trolley Blue Line service to the UTC Transit Center, the service provided by bus Route 150 operating between Downtown San Diego and University City would duplicate the new Trolley services and therefore would be eliminated with implementation of the project, consistent with the 2030 RTP. In addition to this modification, minor changes would be made to several bus routes to improve access to the new Trolley stations proposed under the Refined Build Alternative. These modifications consist of rerouting of bus routes to connect to stations. The service frequency of the routes serving the stations would not change. No changes to other bus routes or the COASTER would be required.



Figure 2-6. Refined Build Alternative Opening Year Trolley Operating Plan



Source: SANDAG, 2013



Figure 2-7. Refined Build Alternative 2030 Trolley Operating Plan



Source: SANDAG, 2013



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3.0 FEDERALLY LISTED SPECIES AND THEIR HABITAT

This chapter provides a description of the federally listed species within the Mid-Coast Corridor, including an overview of their habitat.

3.1 Coastal California Gnatcatcher

Coastal California Gnatcatcher (*Polioptila californica californica*)

Federal Status: Threatened

State Status: None

The coastal California gnatcatcher occurs in coastal Southern California and Baja California year-round, where it depends on a variety of arid scrub habitats. The coastal California gnatcatcher occurs mainly on cismontane slopes (coastal side of the mountains) in Southern California, ranging from Ventura and northern Los Angeles counties south through the Palos Verdes Peninsula to Orange, Riverside, San Bernardino, and San Diego counties. The range for the species continues south to El Rosario, Mexico. Initially it was reported that 99 percent of all coastal California gnatcatcher locality records occurred at or below an elevation of 984 feet above mean sea level (amsl) (Atwood, 1990; Atwood and Bolsinger, 1992). The coastal California gnatcatcher typically occurs in or near coastal scrub vegetation which is composed of relatively low-growing, dry-season deciduous and succulent plants. The coastal California gnatcatcher also occurs in chaparral, grassland, and riparian vegetation communities where the coastal scrub community is close by (Bontrager, 1991). The use of these vegetation communities appears to be most frequent during late summer, autumn, and winter, with smaller numbers of birds using such areas during the breeding season. The coastal California gnatcatcher tends to occur most frequently within the California sagebrush-dominated stands on mesas, gently sloping areas, and along the lower slopes of the Coast Ranges (Atwood, 1990). The coastal California gnatcatcher occurs in high frequencies and densities in coastal scrub communities with an open or broken canopy, whereas it is absent from coastal scrub dominated by tall shrubs and occurs in low frequencies and densities in low coastal scrub with a closed canopy (Weaver, 1998).

Focused surveys were conducted for the Mid-Coast Corridor Transit Project in 2010 and 2012, and are scheduled for spring/summer 2014. Survey reports for 2010 and 2012 are included in Appendix D, and include additional details regarding methodology, survey personnel, and results. A cumulative list of wildlife species observed during surveys conducted for the project is provided in Appendix B. The coastal California gnatcatcher was observed in the study area during focused surveys conducted in 2010 and 2012. Two coastal California gnatcatcher pairs were observed during the 2010 focused survey, and a single male coastal California gnatcatcher, considered to represent a third coastal California gnatcatcher pair in the study area, was observed during the 2012 focused survey. A fourth coastal California gnatcatcher location is on the University of California, San Diego (UCSD) campus north of Voigt Drive and is presumed occupied based on previous observations of the species in nearby contiguous habitat during surveys conducted on behalf of UCSD in 2001 and 2004 (UCSD, 2004 and Leonard, 2004).

During the 2010 survey, one pair was observed in suitable habitat northeast of the Interstate (I-) 5/State Route (SR) 52 interchange (Figure 3-1, Map 1). Coastal California gnatcatcher previously had been recorded south of this location west of I-5 in 1993 (California Department of Fish and Game [CDFG], 2012a). A second pair was observed foraging in suitable habitat just south of Caminito Cassis Street, near the I-5/La Jolla Colony Drive exit (Figure 3-1, Map 2). Coastal California gnatcatcher previously had been recorded near this location in 2002 (CDFG, 2012a).

During the 2012 focused survey, a single male coastal California gnatcatcher was observed at a location south of SR 52, foraging on the west-facing slope above and to the east of Rose Creek south of the terminus of Santa Fe Street (Figure 3-1, Map 3). Although only a single male coastal California gnatcatcher was observed over the course of the focused survey, suitable habitat in the area is assumed to be occupied, and thus this sighting is recorded as a third pair in the study area. Coastal California gnatcatcher had not been recorded in this area in the past (CDFG, 2012a).

The 2010 focused survey did not identify coastal California gnatcatcher within the upper portion (i.e., within 500 feet of the alignment) of the finger canyon to the north of Voigt Drive on the UCSD campus (within the Ecological Reserve on West Campus), but the species was recorded in contiguous habitat immediately to the north during surveys in 2001 and 2004 (UCSD, 2004 and Leonard, 2004). For purposes of this assessment, it is assumed that suitable coastal sage scrub habitat to the north of Voigt Drive is occupied by coastal California gnatcatcher (Figure 3-1, Map 4).

As noted above, focused surveys for coastal California gnatcatcher will be conducted in all suitable habitat in spring/summer 2014.

3.2 Southwestern Willow Flycatcher and Least Bell's Vireo

Southwestern Willow Flycatcher (*Empidonax traillii extimus*)

Federal Status: Endangered

State Status: Endangered

Least Bell's Vireo (*Vireo bellii pusillus*)

Federal Status: Endangered

State Status: Endangered

The willow flycatcher (*E. traillii*), consisting of four or five subspecies, is the most widely distributed of the *Empidonax* flycatchers. The southwestern willow flycatcher has a known United States breeding range in six states: Arizona, New Mexico, California, southwestern Colorado, extreme southern portions of Nevada and Utah, and, possibly, western Texas. In California, its breeding range extends from the Mexican border north and inland to the City of Independence in the Owens Valley east of the Sierra Nevada, to the South Fork Kern River in the San Joaquin Valley, and coastally to the Santa Ynez River in Santa Barbara County (Craig and Williams, 1998). The southwestern willow flycatcher was formerly a common summer resident throughout California, but has been extirpated from most of its historic breeding range in California. In California the smallest regularly occurring breeding populations consist of approximately five pairs (occurrences of one or more pairs at several sites



are reported annually; however, these may not persist) and the largest is approximately 50 pairs (W. Haas, n.d.). The number of southwestern willow flycatchers in California has been estimated at approximately 200, recorded at 22 locations within 13 drainages (Finch et al., 2000). The southwestern willow flycatcher is a riparian-obligate species restricted to complex streamside vegetation. Four general habitat types are used by the southwestern willow flycatcher at its breeding sites: monotypic high-elevation willow; exotic monotypes (e.g., dense stands of tamarisk (*Tamarix* spp.) or Russian olive (*Elaeagnus angustifolius*), especially in the desert southwest; native broadleaf-dominated riparian forest; and mixed native/exotic forests (Sogge et al., 1997). Of these, native broadleaf-dominated and mixed native/exotic are the primary habitats used by southwestern willow flycatcher in California.

The least Bell's vireo is one of four subspecies of the Bell's vireo (*Vireo bellii*); its breeding range includes coastal and inland southern California (including the western edge of southern California's southern deserts), a small area within California's Central Valley, and extreme northern Baja California, Mexico. Although the winter range of full species Bell's vireo is not well known, it generally appears to winter from southern Baja and southern Sonora, Mexico, south along the west coast of Mexico and Central America to Honduras and casually to northern Nicaragua. It is also reported from the eastern coast of Central America from Veracruz south to Honduras (County of Riverside, 2008). Least Bell's vireos primarily occupy riverine riparian habitats along water, including dry portions of intermittent streams that typically provide dense cover within one to two meters (3.3 to 6.6 feet) of the ground, often adjacent to a complex, stratified canopy. Least Bell's vireo nesting habitats in cismontane and coastal areas include southern willow scrub, mulefat scrub, arroyo willow riparian forest edge, wild blackberry thickets, and, more rarely, cottonwood forest, sycamore alluvial woodland, and southern coast live oak riparian forest. Along riparian corridors at desert locations, young willows (*Salix* spp.) are favored and, where absent, mesquite (*Prosopis* spp.) and desert apricot (*Prunus fremontii*) are typically used. In interior regions, least Bell's vireo habitat is usually limited to the immediate vicinity of watercourses below approximately 457 meters (1,500 feet) amsl (51 FR 16474–16482; Small, 1994). In the coastal portions of its southern California range, the least Bell's vireo occurs in lower portions of canyons, typically below 600 meters (2,000 feet) amsl.

Habitat suitable for the state- and federally-listed endangered least Bell's vireo and the state- and federally-listed endangered southwestern willow flycatcher is present within the study area in the San Diego River and along Rose Creek, but focused surveys for these species were negative. Surveys were conducted concurrently from May through July, 2010 and were in accordance with the current southwestern willow flycatcher and least Bell's vireo protocols (Sogge et al., 1997; U.S. Fish and Wildlife Service [USFWS], 2000; USFWS, 2001).

As stated above, no least Bell's vireo or southwestern willow flycatcher were observed during the protocol-level surveys conducted in 2010 (Appendix D). However, one individual male least Bell's vireo was detected in 2014 during ongoing surveys; there is insufficient information at this time to determine whether the detection represents a breeding pair. The single male least Bell's vireo was observed using riparian habitat to the east and west of the existing rail bridge and to the west of the existing Santa Fe



Street bridge over Rose Creek in April and early May; however, the individual was not seen in follow-up surveys conducted on May 22 or May 27. The area will be surveyed on 4 more occasions as part of the 8-visit protocol survey on June 6, June 16, July 1, and July 15. Riparian habitat at this location and potentially suitable riparian habitat present elsewhere in the study area occurs in highly urbanized areas. Least Bell's vireo and southwestern willow flycatcher have not been recorded previously (prior to 2014) in the study area. The closest record of least Bell's vireo is from Tecolote Canyon Natural Park and the San Diego River approximately 4 miles east of the study area (CDFG, 2012a). The only records of southwestern willow flycatcher in south and central San Diego County are in the Escondido, Jamul Mountains, and El Cajon Mountains, California, U.S. Geological Survey quadrangles (quads) (CDFG, 2012a). Although southwestern willow flycatcher was not observed in the study area, and least Bell's vireo may not be nesting in the area, potentially suitable riparian habitat in the study area could become occupied prior to construction. Suitable riparian habitat areas are shown on Figure 3-1, Maps 5-7.

The San Diego Association of Governments is currently conducting updated focused surveys. Focused surveys for least Bell's vireo and southwestern willow flycatcher were initiated in April 2014, and will be completed in July 2014. As noted above, a single male least Bell's vireo was detected in 2014, and the location is shown on Figure 3-1, Map 6. The 2010 focused survey report submitted to the USFWS is included in Appendix D. A cumulative list of wildlife species observed during surveys conducted for the project is provided in Appendix B.

3.3 Light-footed Clapper Rail

Light-footed Clapper Rail (*Rallus longirostris levipes*)

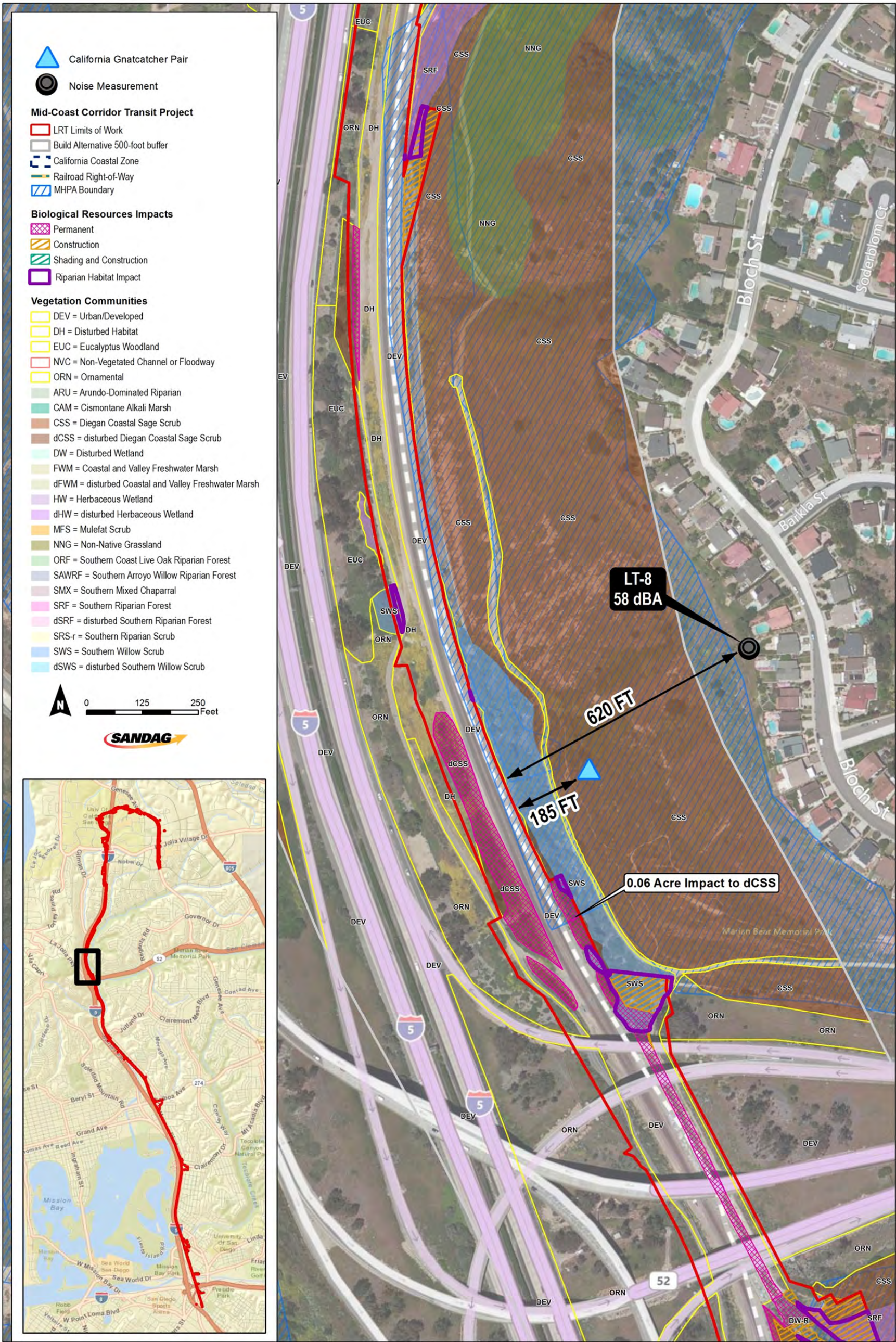
Federal Status: Endangered

State Status: Endangered

Light-footed clapper rails are omnivorous and opportunistic foragers which rely mostly on salt marsh invertebrates. This species is typically resident in coastal marsh habitats and its current range in California extends from Ventura County in the north to the Mexican border in the south (USFWS, 2009). Distribution within the range of the light-footed clapper rail is discontinuous due to sporadically occurring salt marsh habitats along the coastline; however, it is believed that historically most of the coastal salt marshes supported clapper rails from Santa Barbara to the Mexican border (USFWS, 2009). Nesting usually begins in March and late nests hatch by August. Nests are placed to avoid flooding by tides yet in dense enough cover to be hidden from predators and support a large nest (Storey et al., 1988).

Potentially suitable foraging and nesting habitat for light-footed clapper rail is present in the study area in the San Diego River, but it is of marginal quality (Figure 3-1, Map 4). Potentially suitable habitat is primarily to the west of the existing Los Angeles—San Diego—San Luis Obispo Rail Corridor Agency (LOSSAN) bridge and includes cismontane alkali marsh and freshwater marsh to the north of the main flow channel, and open disturbed wetlands and non-vegetated channel or floodway to the south of the main flow channel. Although focused surveys for light-footed clapper rail have not been conducted for this project, the species was not observed during the 2010 focused

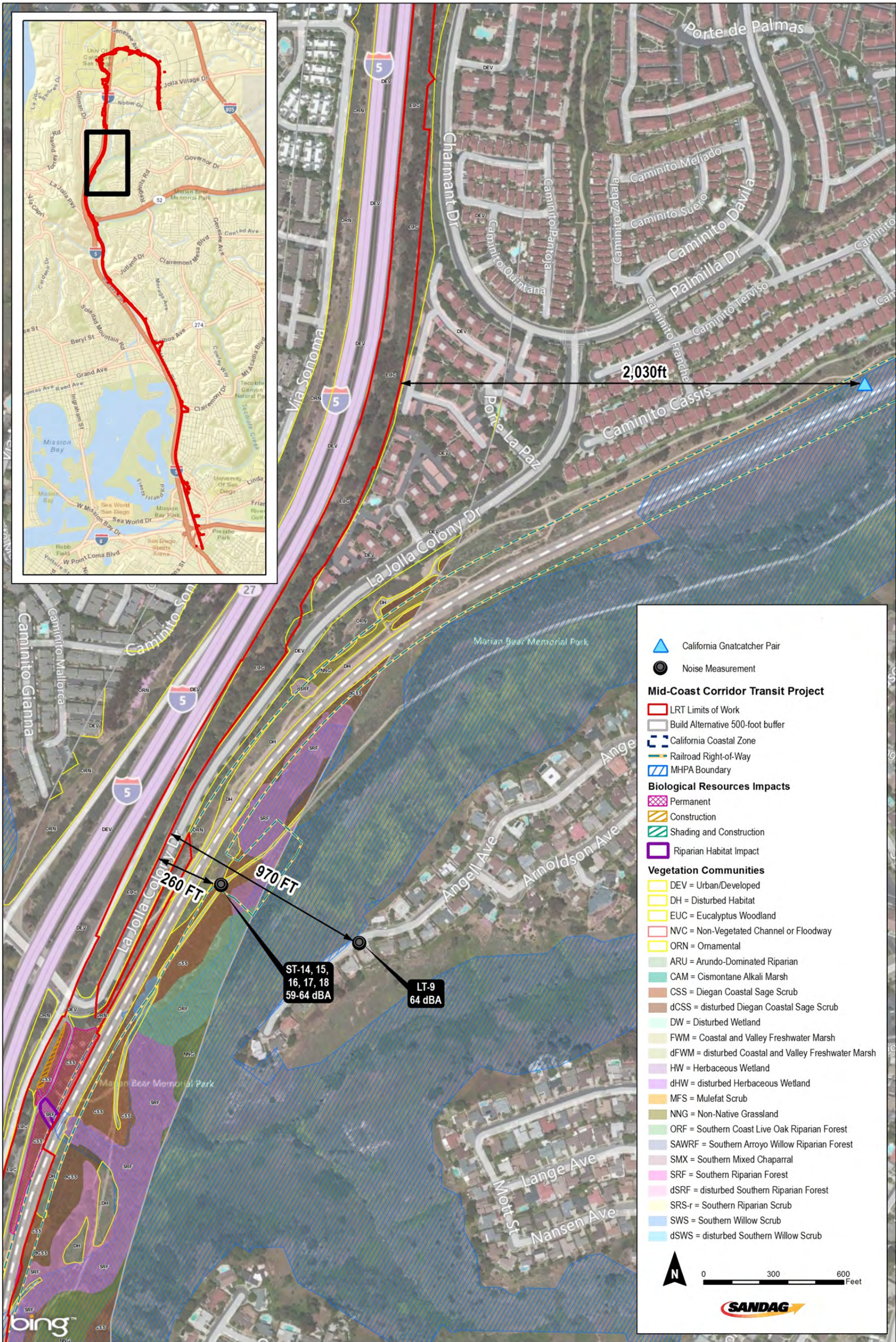
Figure 3-1. Federally Listed Species Locations, Habitat, and Proposed Impacts, Map 1



Source: SANDAG, 2014

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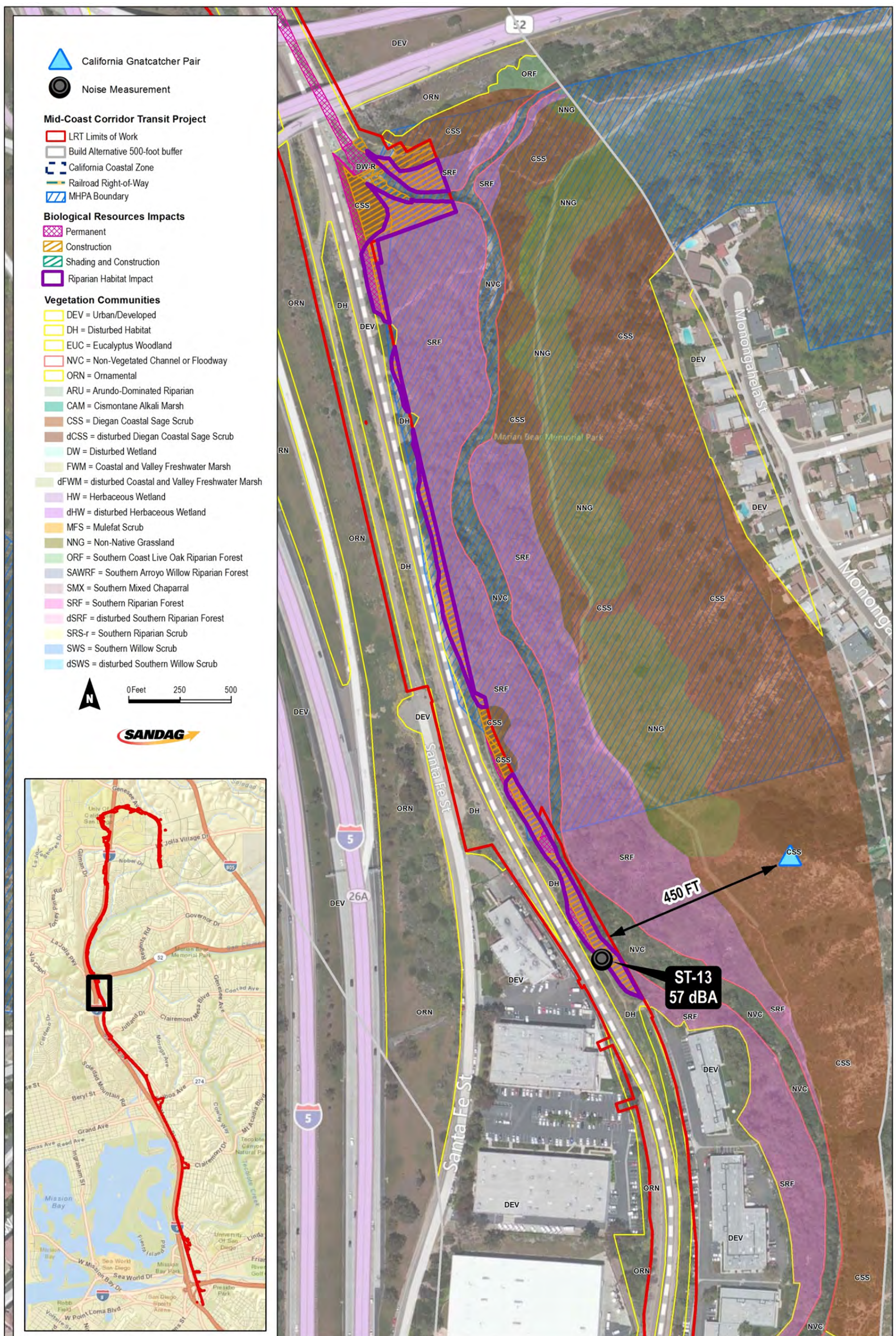
Figure 3-1. Federally Listed Species Locations, Habitat, and Proposed Impacts, Map 2



Source: SANDAG, 2014

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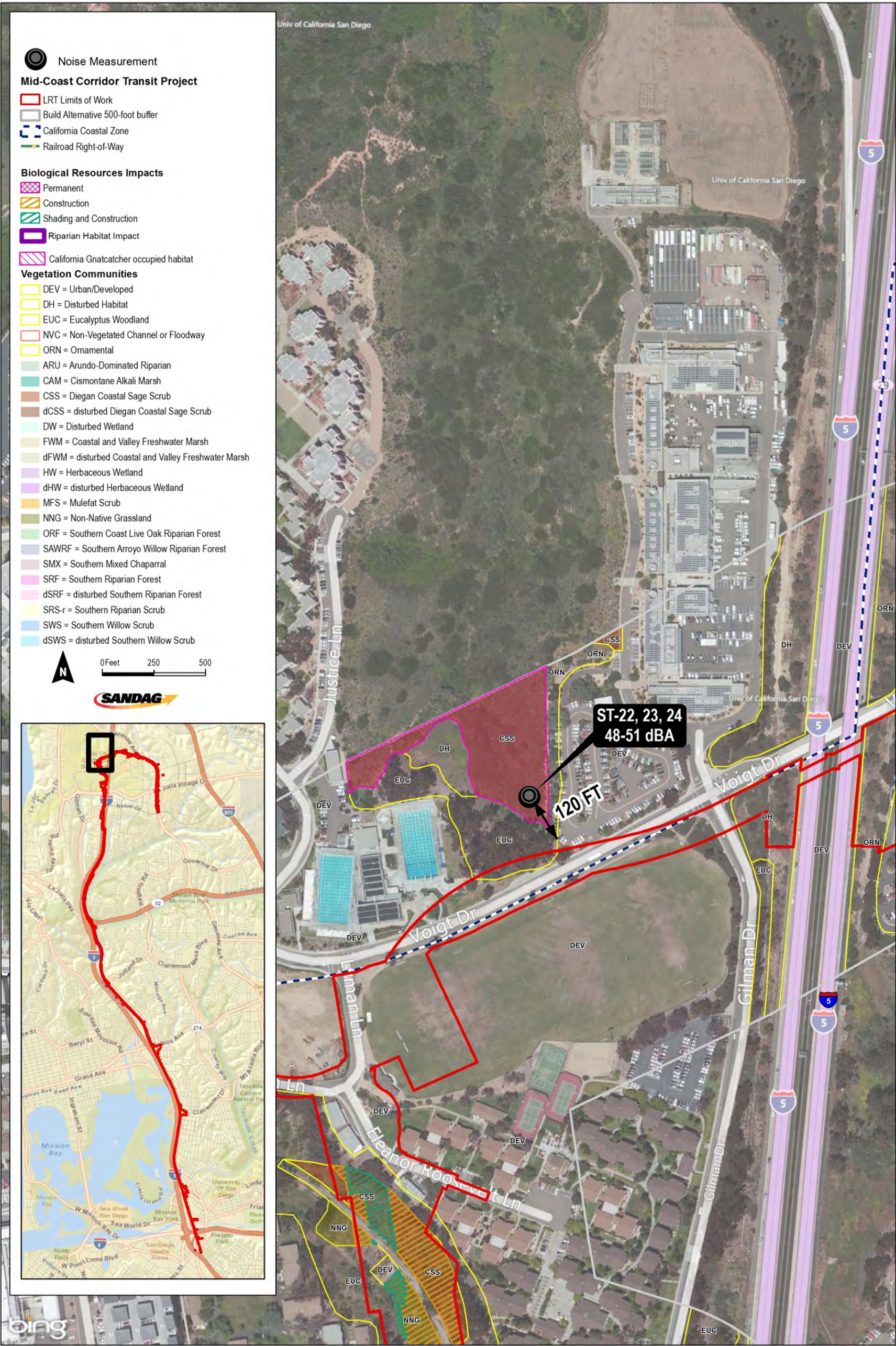
Figure 3-1. Federally Listed Species Locations, Habitat, and Proposed Impacts, Map 3



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Figure 3-1. Federally Listed Species Locations, Habitat, and Proposed Impacts, Map 4

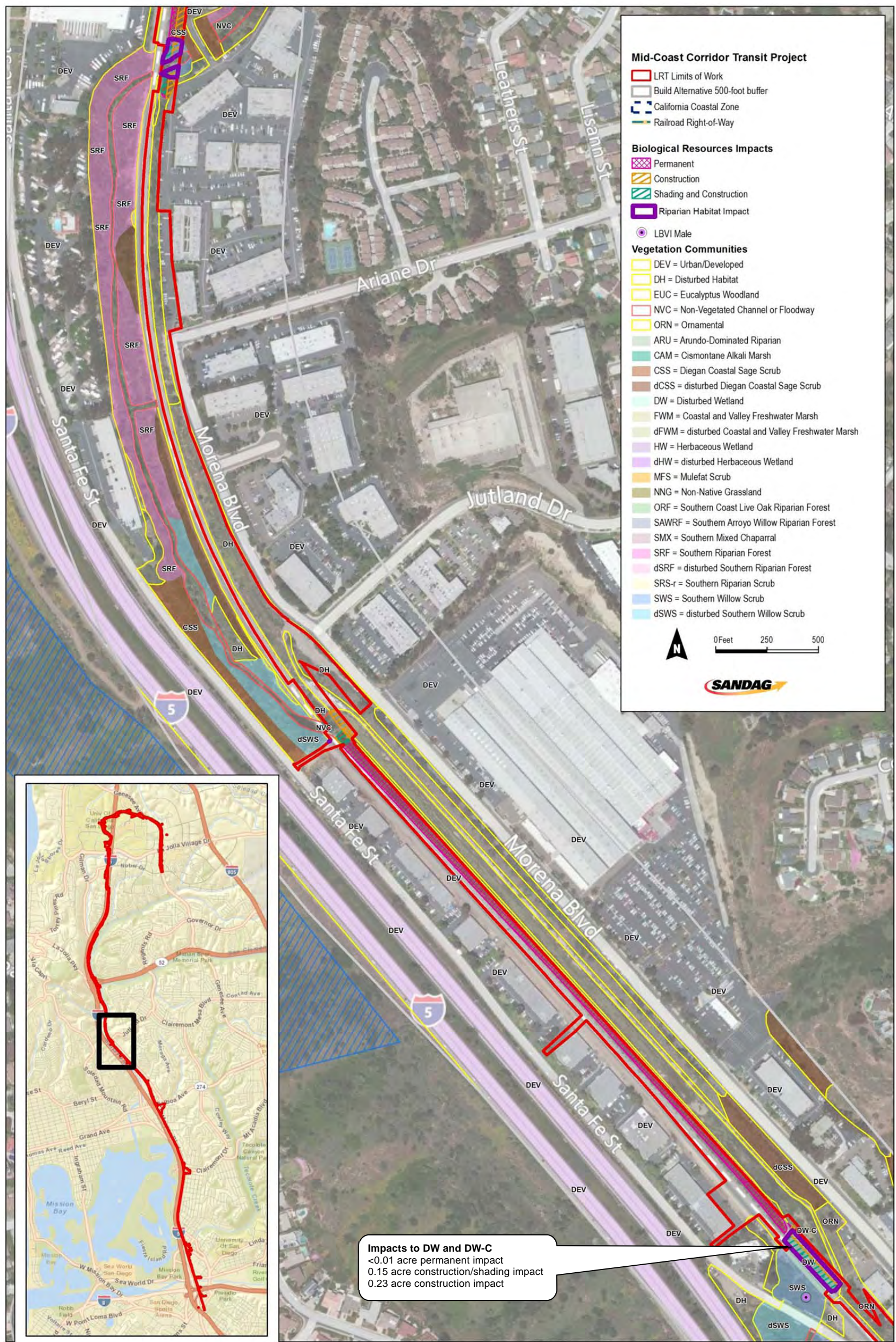


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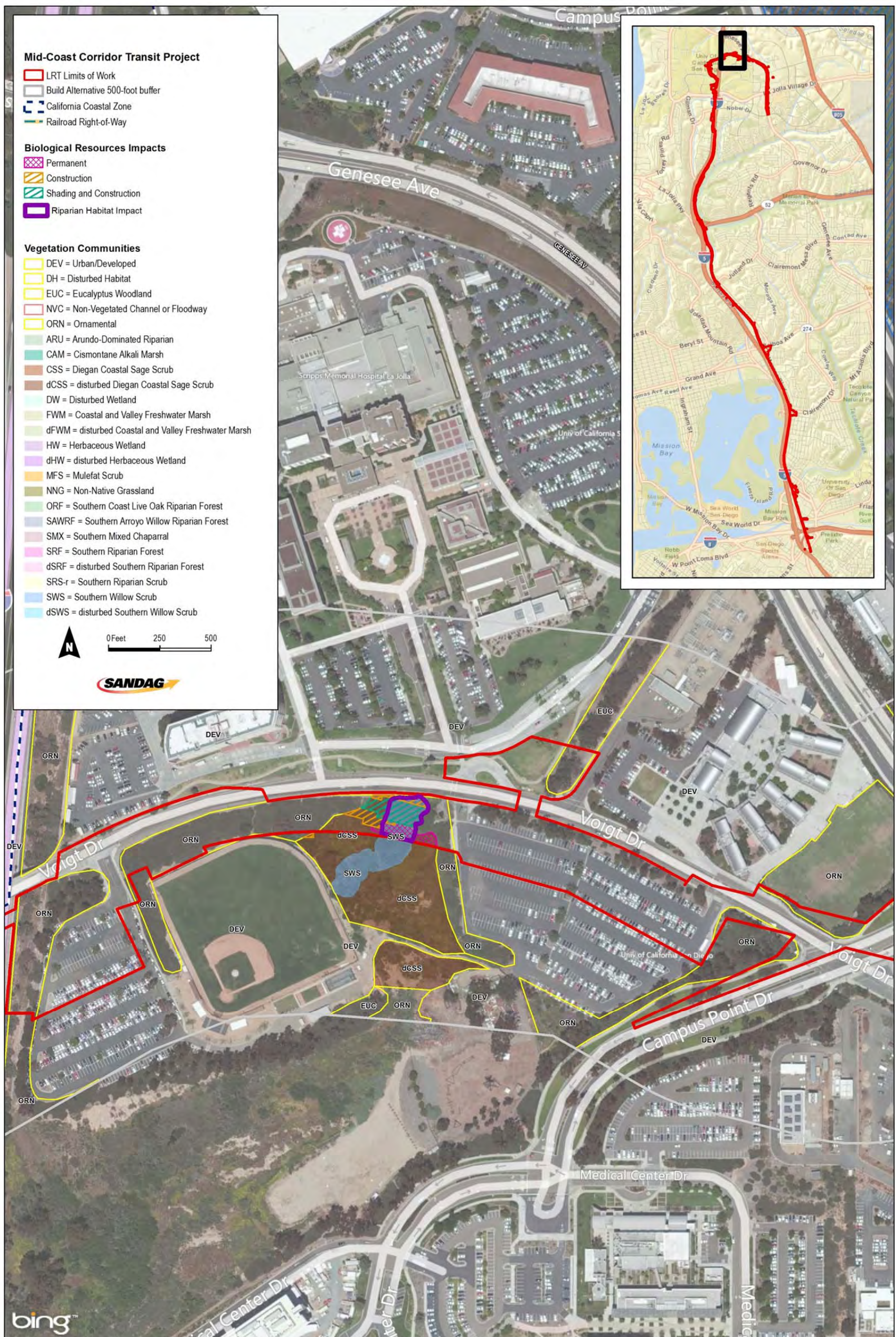
Figure 3-1. Federally Listed Species Locations, Habitat, and Proposed Impacts, Map 6



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Figure 3-1. Federally Listed Species Locations, Habitat, and Proposed Impacts, Map 7



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surveys conducted in the San Diego River for least Bell's vireo and southwestern willow flycatcher, which involved eight visits to the study area between April and July. Wildlife species observed during the 2010 focused survey for least Bell's vireo and southwestern willow flycatcher are listed in the survey report submitted to USFWS (Appendix D); a cumulative list of wildlife species observed in the study area is provided in Appendix B. Additionally, pre-construction surveys and focused surveys for light-footed clapper rail were conducted in the fall 2013 and spring 2014, respectively, in support of geotechnical activities for the LOSSAN project which crosses the San Diego River immediately to the west of the Mid-Coast Corridor Transit Project. Those surveys were negative (Merkel & Associates, 2014). The closest record of light-footed clapper rail is from the San Diego River estuary to the west of I-5, approximately 1 mile from the study area (CDFG, 2012a, Zembal and Hoffman, 2012). Light-footed clapper rail is also known from upstream portions of the San Diego River approximately 13 miles inland at Lake Kumeyaay (Zembal and Hoffman, 2012).

Therefore, this species is considered to have a low potential to nest within the study area in the San Diego River due to marginal quality of available marsh habitat and a moderate potential to forage in marginal quality habitats west of existing LOSSAN bridge.

3.4 San Diego Fairy Shrimp

San Diego Fairy Shrimp (*Branchinecta sandiegonensis*)

Federal Status: Endangered

State Status: None

San Diego fairy shrimp is a small aquatic crustacean typically restricted to vernal pools and other non-vegetated ephemeral basins 2 to 12 inches in depth. The San Diego fairy shrimp occurs in the Great Central Valley and Coastal Mesa Systems (Eriksen and Belk, 1999). The geographic range of the species extends from coastal Orange and San Diego Counties in southern California and in northwestern Baja California, Mexico (USFWS, 2007). This species is usually observed from January to March when seasonal rainfall fills vernal pools and initiates cyst (egg) hatching (USFWS, 2008). This species may also occasionally occur in ditches and road ruts. The shrimp hatch from cysts when cool water (5-20° C for hatching) fills the pool and are mature in 10-20 days in the field (Eriksen and Belk, 1999). At maturity, mating takes place and cysts are dropped. Water characteristics of pools where this species is found include moderate pH (6.5-8) and alkalinity (40-55 parts per million) and total dissolved solids (mean of 75 parts per million, as measured by conductivity) are low (Eriksen and Belk, 1999).

Wet-season focused surveys for listed species of fairy shrimp were conducted in 2010-2011, 2011-2012, and 2013-2014. No listed fairy shrimp species were detected during the 2010-2011 survey. San Diego fairy shrimp was observed during wet-season focused surveys in 2011-2012 and in 2013-2014. During the 2011-2012 focused survey, San Diego fairy shrimp was observed in Basin BB (Figure 3-1, Map 8). This basin consists of a long, narrow area approximately 270 feet long and varying between 2 and 10 feet in width. The basin is located approximately 72 feet from the project alignment (centerline of the proposed southbound Trolley track), immediately adjacent to I-5 between I-5 and Morena Boulevard, south of Clairemont Drive and north of Tecolote Road. During the

2013-2014 focused survey, San Diego fairy shrimp was observed in Basin II (Figure 3-1, Map 8). Basin II is approximately 76 feet long and 5.5 feet wide, and is located approximately 25 feet to the east of the existing LOSSAN tracks. The maximum depth measured for Basin II during the 2013-2014 survey was 10 inches.

The non-sensitive versatile fairy shrimp (*Branchinecta lindahl*) was observed in several basins within the study area (i.e., Basins WW, XX, ZZ, H, I, J, and K; see Appendix D). The majority of the depressions sampled in the study area were widely scattered (i.e., not clustered in a particular area) in and adjacent to the MTS right-of-way. The depressions detected in the study area were either road ruts or ephemeral basins. Road ruts are depressions typically formed by vehicular traffic within or immediately adjacent to access roads, which generally lack aquatic vegetation and are heavily disturbed by vehicular traffic. Ephemeral basins are depressions that retain sufficient water to often support aquatic vegetation, and generally lack vehicle disturbance. Of the 42 depressions sampled in 2010-2011, 27 were considered road ruts and 15 were considered ephemeral basins (12 of the ephemeral basins were heavily disturbed and did not support native vegetation). A total of 54 basins were observed during the 2011-2012 survey, including 32 considered to be road ruts and 22 considered to be ephemeral basins. During the 2013-2014 surveys to date, the majority of basins present in 2010-2011 and 2011-2012 have remained too dry to establish ponded conditions capable of supporting fairy shrimp. Eight basins were observed during the 2013-2014 survey.

The 2010-2011 and 2011-2012 focused survey reports submitted to the USFWS are included in Appendix D. The 2013-2014 focused survey report will be submitted to USFWS upon completion of surveys. A cumulative list of wildlife species observed during surveys conducted for the project is provided in Appendix B.

3.5 Special-Status Plants

In 2009, a focused survey was conducted for special-status plant species in the approximately 141 acres of suitable habitat located in Rose Canyon and on portions of the UCSD campus north of Miramar Street and north of Voigt Drive within 500 feet of the project. In 2010, focused surveys were conducted for special-status plant species in 3 separate passes in May, June, July, and August in approximately 91 acres of suitable habitat located within 100 feet of the project alignment. The different survey passes were timed to coincide with flowering periods when the target species are most detectable and identifiable. In 2011, an additional focused plant survey was conducted for San Diego sagewort (*Artemisia palmeri*) and selected other species beyond areas surveyed in 2010. Approximately 35 acres of suitable habitat were surveyed from the end of Santa Fe Street south to Balboa Avenue. No federally-listed species were recorded during any of the focused plant surveys. A cumulative list of plant species observed in the study area is provided in Appendix A.

Figure 3-1. Federally Listed Species Locations, Habitat, and Proposed Impacts, Map 8



Source: SANDAG, 2014

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4.0 SUMMARY OF EFFECTS

The long-term (direct and indirect), construction (direct and indirect), and cumulative effects of the Mid-Coast Corridor Transit Project on federally listed wildlife species, vegetation communities, and aquatic resources are described in this section.

Potential habitat for federally listed species could be directly or indirectly affected by the construction of the project. Direct effects may include permanent and/or temporary construction-related impacts. Activities that may cause varying degrees of impact on listed species and/or their habitats include, but are not necessarily limited to:

- Construction activities within potential habitat for listed species
- Construction activities associated with dust, erosion, and runoff
- Construction noise adversely impacting breeding listed bird species
- Vegetation clearing, grading, and other construction activities
- Long-term shading impacts to potential habitat for listed species

4.1 Long-Term Impacts

Long-term, direct impacts refer to the permanent loss of vegetation, land covers, and plant and animal species within a designated impact footprint as well as direct impacts to biological resources that would result from ongoing project operations. Direct impacts typically occur during vegetation clearing, grading, or excavation associated with project implementation. Direct impacts to plants can include complete or partial removal of the plants; crushing, trimming, or mowing; and compression of soil around roots. Direct impacts to wildlife refer to loss of habitat and/or loss of, or harm to, individuals that can be immediately attributed to the project. Loss of, or harm to, individuals may vary by wildlife species, but the result is a net loss of a portion of a species' population. For example, equipment used for excavation or grading can cause direct wildlife mortality, or injure or entomb individuals, resulting in their eventual death. Vegetation clearing and/or grading can also result in destruction of birds' nests, resulting in the loss of eggs and young. Additionally, increased train traffic could also impact wildlife species directly through injury or mortality from collisions with trains.

Direct impacts include areas within the footprint of permanent structures and facilities to be constructed as part of the project, as well as portions of the rail right-of-way that may not include permanent structures but that would be cleared and maintained as part of the long-term operation and maintenance of the project. Permanent structures and facilities include the double-track alignment from the Old Town Transit Center to the University Towne Centre Transit Center, overhead structures, bridges, stations, and associated facilities (e.g., parking facilities). Permanent structures also include several traction power substations located along the alignment. Refer to Section 2.4 for a description of project features.

Long-term direct impacts associated with the Mid-Coast Corridor Transit Project would generally include the loss of native riparian and upland vegetation communities. Direct

impacts generally would occur within or immediately adjacent to the existing Metropolitan Transit System (MTS) right-of-way and in existing developed areas.

Long-term indirect impacts associated with the project include shading impacts to native riparian vegetation communities within or adjacent to the existing MTS right-of-way and/or on the University of California, San Diego (UCSD) campus. Indirect impacts to habitat linkages and wildlife corridors could result primarily from adverse edge effects, which typically occur along the development–preservation interface, including lighting, noise, and invasive species. The project would also introduce light rail transit train activity and add new tracks within the existing MTS right-of-way in areas already subject to potential adverse edge effects that may include noise and lighting associated with current rail service operations. Potential long-term indirect impacts may also include the degradation of habitat due to invasion by exotic plants and animals, exposure to urban pollutants (e.g., pesticides, herbicides, and other toxic materials), soil erosion, noise, and hydrological changes (e.g., runoff pattern changes, surface and ground water levels and quality).

4.2 Construction Impacts

During construction, establishing of construction access and staging areas, installing falsework, and completing ground improvements at bridge crossings and elevated portions of the alignment would require the removal of native riparian and upland vegetation communities, resulting in direct impacts. Coastal sage scrub areas that would be directly but temporarily affected during construction are located entirely within or along the existing MTS right-of-way or on the UCSD campus surrounded by developed land uses. Temporary impacts to coastal sage scrub occur within the Multi-Habitat Planning Area along Rose Creek to the north and south of State Route (SR) 52. The affected vegetation communities within the Multi-Habitat Planning Area would be confined to areas immediately adjacent to the existing MTS right-of-way and would result in a temporary loss of habitat for special-status wildlife species. As project construction is anticipated to occur over a 4.5-year period, the duration of temporal loss of habitat could be 4.5 years or longer depending on the length of time required to restore the vegetation to pre-construction conditions (typically around 3 to 5 years).

Indirect construction impacts on adjacent biological resources located outside the limits of work typically include noise, vibration, dust, lighting, increased human activity (e.g., construction workers), erosion and sedimentation, pollutants, and chemical spills. These kinds of impacts can cause behavioral disruptions and stress in wildlife and degrade habitat adjacent to construction areas.

During construction, noise levels depend on the number and type of equipment, their general condition, the amount of time each piece operates per day, and the presence of any noise attenuating features such as walls or natural topography. The impact of increased noise depends on the location of the construction activities relative to adjacent biological resources, like breeding birds, that would be potentially affected by construction noise. Project construction is expected to require the use of heavy earth-moving equipment, pneumatic tools, generators, concrete pumps, and similar equipment, all of which may contribute to increased noise levels within habitat areas near construction areas. During construction, ground-borne vibration associated with



ground improvement activities necessary at bridge crossings and elevated structures may affect biological resources in adjacent areas. Ground improvements are typically necessary where support structures such as piers (walls or columns) and abutments are proposed on unimproved lands, and can create vibration levels similar to pile driving. If construction is proposed at night, lighting within construction areas could spill into adjacent habitat areas and potentially affect wildlife species active primarily at night.

4.3 Cumulative Impacts

Cumulative impacts are defined by the National Environmental Policy Act as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such actions. Cumulative impacts include the direct and indirect effects of a project and can result from individually minor, but collectively substantial, actions taking place over a period of time” (40 Code of Federal Regulations 1508.7).

The timeframe for the cumulative impacts analysis included both past actions and reasonably foreseeable future actions. The period of the past analysis was determined by the information available for the resources studied. In most cases, it considered the time since development of the corridor began. The time for future effect analysis extends from the present day to 2030, which is the horizon year for the *2030 San Diego Regional Transportation Plan: Pathways for the Future* (SANDAG, 2007).

A majority of cumulative transportation and transit projects are located within or adjacent to existing developed rights-of-way in urbanized areas. The analysis assumes implementation of the planned transportation improvements committed to be implemented by 2030, as identified in the *2030 San Diego Regional Transportation Plan: Pathways for the Future* (SANDAG, 2007) under the Revenue Constrained Scenario.

- Double tracking of the Los Angeles—San Diego—San Luis Obispo Rail Corridor Agency (LOSSAN) tracks and other rail improvements, with an increase in frequency of COASTER service to every 20 minutes during peak and to every 60 minutes during off-peak periods in both directions.
- High occupancy vehicle (HOV) lanes on Interstate (I-) 5 from I-8 north to Oceanside, with direct access ramps (DARs) at various locations, of which the DARs at Voigt Drive would be located within the Mid-Coast Corridor. The HOV lanes would be restricted to vehicles with two or more occupants.
- Combination of HOV and Managed Lanes on I-805 from I-5 to South Bay, with DARs at Carroll Canyon Road and Nobel Drive.
- San Diego Trolley (Trolley) low-floor system improvements to the Trolley Blue and Orange Lines, including station platform, power, and signaling improvements to allow extending the Trolley Green Line to the 12th and Imperial Avenue Transit Center and use of low-floor vehicles system-wide.

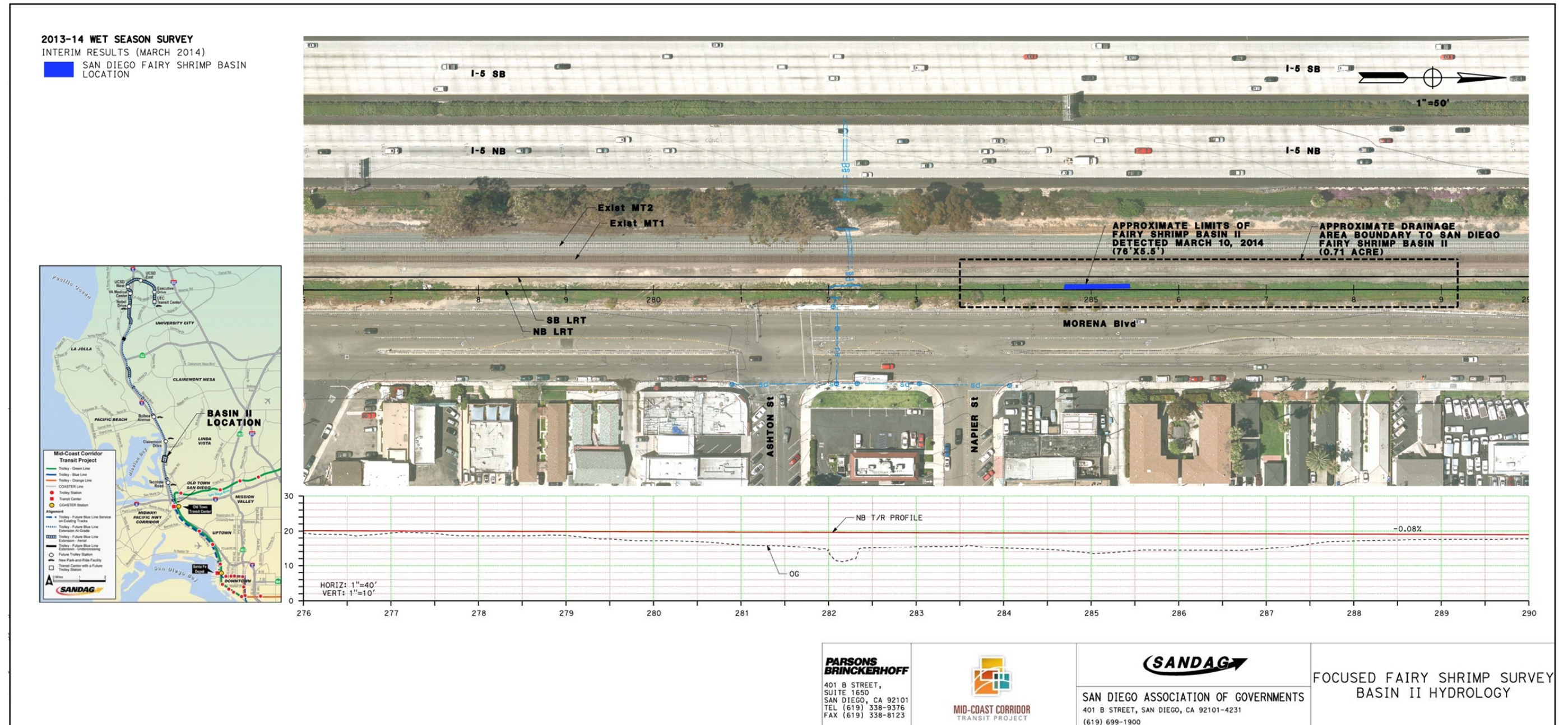


Regional growth and development is also expected to affect areas primarily within urbanized areas. The cumulative effects of the Mid-Coast Corridor Transit Project and future projects on regional biological resources are expected to be limited. Where native habitats are present in areas affected by future projects, impacts could include the removal of native vegetation communities, the loss of aquatic resources, and the loss of habitat for special-status plant and wildlife species. Each of these projects, however, would undergo separate environmental review and would be permitted for construction consistent with applicable federal, state, and local regulations, plans, and policies.

The Multiple Species Conservation Program (MSCP) was designed to compensate for the cumulative loss of biological resources throughout the region. Projects that conform with the MSCP, as specified by the Subarea Plan and implementing ordinances (i.e., *San Diego Municipal Code Land Development Code—Biology Guidelines* [City of San Diego, 2012]), are not expected to result in a cumulatively considerable impact for those biological resources adequately covered by the MSCP. These resources include the native vegetation communities and the MSCP Covered Species (including least Bell's vireo, coastal California gnatcatcher, southwestern willow flycatcher, and light-footed clapper rail).

Although San Diego fairy shrimp was observed in the study area and is not covered by the MSCP, the impacted basin (Basin II) is located within the existing MTS right-of-way in an otherwise developed area with limited long-term conservation value for the species. This impacted basin is devoid of vernal pool vegetation and dependent upon hydrology solely from storm water runoff from the watershed area tributary (approximately 0.70 acres), which could be disrupted by ongoing routine maintenance within the railway corridor. Figure 4-1 presents the hydrology for Basin II. Because the location does not provide long-term conservation value for the species, impacts associated with the project would not have a cumulative impact on this resource within the corridor.

Figure 4-1. San Diego Fairy Shrimp Basin II Hydrology



Source: SANDAG, 2014

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4.4 Summary of Impacts to Vegetation Communities and Land Covers

Long-term direct and indirect (shading) and construction (short-term) impacts to vegetation communities and land covers resulting from implementing the Mid-Coast Corridor Transit Project are presented in Table 4-1. The vast majority (91 percent) of long-term direct impacts would occur within disturbed/developed lands and non-native vegetation communities, including developed and disturbed habitat, non-native grasslands, eucalyptus woodland, and ornamental plantings. Riparian communities would account for 1 percent of long-term impacts and include disturbed wetland, southern riparian forest, mulefat scrub, southern willow scrub (including disturbed), Arundo-dominated riparian, and non-vegetated floodway or channel. Impacts to native uplands include coastal sage scrub and disturbed coastal sage scrub communities, and would account for 6 percent of long-term impacts.

A total of 14.54 acres of riparian and upland vegetation communities and land covers would be subject to potential long-term indirect impacts as a result of shading from elevated project structures. The majority of areas affected, approximately 13.30 acres, are disturbed/developed lands and/or consist of non-native vegetation, including disturbed habitat, urban/developed, ornamental, and eucalyptus woodland. A total of 0.28 acre of coastal sage scrub (including disturbed) that would be affected by shading is located beneath the UCSD West Station. Of the 0.89 acre of riparian communities and land covers subject to potential shading effects, 0.10 acre comprises non-vegetated channel or floodway and the remaining 0.79 acre is comprised of riparian communities including mulefat scrub, southern willow scrub, disturbed southern willow scrub, disturbed wetland, and Arundo-dominated riparian.

Potential construction (short-term) impacts would result from establishing construction access and staging areas, installing falsework, and completing ground improvements at bridge crossings and elevated portions of the alignment. A total of 59.60 acres of riparian and upland vegetation communities and land covers would be subject to potential short-term impacts as a result of construction activities. The majority of the areas affected, 53.67 acres, are disturbed/developed lands and/or consist of non-native vegetation, including disturbed habitat, urban/developed, ornamental, eucalyptus woodland. A total of 2.57 acres of coastal sage scrub (including disturbed) would be directly removed by construction activities. Of the 3.21 acres of riparian communities and land covers subject to construction impacts, 0.29 acre comprise non-vegetated channel or floodways and the remaining 2.92 acres is comprised of riparian communities including disturbed wetland, disturbed herbaceous wetland, southern riparian forest, mulefat scrub, southern willow scrub (including disturbed), and Arundo-dominated riparian. The affected vegetation communities would be confined to areas immediately adjacent to the existing MTS right-of-way and on the UCSD campus and would represent a temporary loss of vegetation communities in the study area. As project construction is anticipated over a 4.5-year period, the duration of temporal loss of vegetation communities could be 4.5 years or longer depending on the length of time required to restore the vegetation to pre-construction conditions.



Table 4-1. Impacts to Vegetation Communities and Land Covers

General Vegetation Type (Holland/Oberbauer Code)	Existing (Acres)	Impacts (Acres)				Remaining (Acres)
		Long- Term	Construction/ Shading	Construction	Total	
Riparian Vegetation Communities						
Disturbed Wetland (11200)	11.5	0.07	0.32	0.98	1.38	10.12
Disturbed Herbaceous Wetland (52510)	0.01	—	—	0.01	0.01	0
Southern Riparian Forest (61300)	48.0	0.48	—	0.89	1.37	46.63
Mulefat Scrub (63310)	1.2	<0.01	0.09	0.02	0.11	1.09
Southern Willow Scrub (63320)	8.8	0.16	0.16	0.66	0.98	7.82
Disturbed Southern Willow Scrub (63320)	7.7	<0.01	0.11	0.27	0.39	7.31
Arundo-Dominated Riparian (65100)	1.1	0.02	0.10	0.10	0.22	0.88
Non-Vegetated Channel or Floodway (64200)	3.0	0.13	0.10	0.29	0.52	2.48
Riparian Subtotal*	81.3	0.87	0.89	3.21	4.97	76.33
Upland Vegetation Communities						
Diegan Coastal Sage Scrub (32500)	71.1	1.73	0.15	1.92	3.81	67.29
Disturbed Diegan Coastal Sage Scrub (32500)	36.4	4.25	0.12	0.65	5.03	31.37
Non-Native Grassland (42200)	28.6	1.43	0.07	0.14	1.65	26.95
Disturbed Habitat (11300)	57.3	23.67	0.56	5.06	29.29	28.01
Urban/Developed (12000)	1,092.2	43.91	10.08	34.47	88.47	1,003.73
Ornamental (N/A)	117.9	5.71	1.64	8.49	15.84	102.06
Eucalyptus Woodland (79100)	63.7	10.83	1.02	5.65	17.50	46.20
Uplands Subtotal*	1,467.2	91.53	13.64	56.38	161.59	1,305.61
Total*	1,548.5	92.42	14.54	59.60	166.55	1,381.95

Source: SANDAG, 2013

Note: *Acreages do not total due to rounding.

Impacts presented in this table represent the Refined Build Alternative, as approved by the SANDAG Board of Directors on November 15, 2013. The Refined Build Alternative alignment was amended on May 9, 2014 in the vicinity of I-5 and Nobel Drive, and acreages will be updated once the plan set has been updated. The change will primarily affect impacts to disturbed habitat, urban/developed, eucalyptus woodland, and ornamental areas.

4.5 Summary of Impacts to Waters of the U.S.

The project would result in 0.37 acre of long-term direct impacts to wetland and non-wetland Waters of the U.S. The majority of long-term impacts to Waters of the U.S. are associated with replacing an approximately 700-foot-long concrete-lined open channel portion of Rose Creek located at the SR 52 interchange with a narrower concrete-lined open channel and installing associated channel improvements immediately upstream and downstream. Long-term direct impacts are also associated with the concrete piers and abutments of the five bridge crossings (one over the San Diego River, one over



Tecolote Creek, and three over Rose Creek). Limited long-term impacts to Rose Creek north and south of SR 52 are associated with grading and/or retaining walls necessary to accommodate the proposed double-track light rail transit alignment alongside the existing main line within the MTS right-of-way.

Shading from elevated project structures could have long-term indirect impacts to 0.72 acre of wetland and non-wetland Waters of the U.S. (0.59 acre of wetlands and 0.13 acre of non-wetland) (Table 4-2).

Table 4-2. Impacts to Waters of the U.S. by Vegetation Type

Resource	General Vegetation Type (Holland/Oberbauer Code)	Long-Term (Acres)	Short-term Construction/ Indirect Shading (Acres)	Short-term Construction (Acres)	Total (Acres)
Wetlands	Disturbed Wetland (11200)	0.02	0.28	0.18	0.47
	Southern Riparian Forest (61300)	0.03	—	0.05	0.08
	Mulefat Scrub (63310)	< 0.01	0.09	0.02	0.11
	Southern Willow Scrub (63320)	0.12	0.06	0.38	0.56
	Disturbed Southern Willow Scrub (63320)	< 0.01	0.11	0.27	0.39
	Arundo-Dominated Riparian (65100)	< 0.01	0.04	0.02	0.07
Wetlands Subtotal*		0.17	0.59	0.92	1.68
Non-Wetland Waters	Non-Vegetated Channel or Floodway (64200)	0.13	0.10	0.29	0.52
	Disturbed Wetland (11200) – Concrete Lined	0.06	0.03	0.64	0.73
	Disturbed Wetland (11200) - Riprap	—	—	0.08	0.08
Non-Wetland Waters Subtotal*		0.19	0.13	1.0	1.33
Wetland and Non-Wetland Total*		0.37	0.72	1.92	3.01

Source: City of San Diego, 1997; Oberbauer et al., 2008.

Notes: * Totals may not sum due to rounding.

USACE = U.S. Army Corps of Engineers

Impacts presented in this table represent the Refined Build Alternative, as approved by the SANDAG Board of Directors on November 15, 2013. The Refined Build Alternative alignment was amended on May 9, 2014 in the vicinity of I-5 and Nobel Drive, and acreages will be updated once the plan set has been updated.

The change is not expected to affect impacts to jurisdictional aquatic resources.

During construction, temporary impacts to Waters of the U.S. would result from falsework installation, ground improvements, staging areas, and haul routes associated with bridge construction. A total of 2.64 acres of Waters of the U.S. (1.51 acres of wetland and 1.13 acres of non-wetland waters) would be temporarily impacted, including Arundo-dominated riparian, southern willow scrub (including disturbed), southern riparian forest, disturbed wetland, mulefat scrub, non-vegetated channel or floodway, and disturbed herbaceous wetland.



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5.0 FEDERALLY LISTED SPECIES

This chapter includes the analysis of the long-term (direct and indirect) and construction (short-term direct and indirect) impacts of the Mid-Coast Corridor Transit Project on the federally listed species. This section includes a discussion of avoidance and minimization measures and proposed mitigation. The determination of effect for each species is discussed in detail below and is based on the following U.S. Fish and Wildlife Service (USFWS) criteria:

- **“No effect”** means there are absolutely no effects, positive or negative, to species or habitat from the proposed action. “No effect” does not mean a small effect or an effect that is unlikely to occur. If effects are insignificant (small in size) or discountable (extremely unlikely), a “may affect, but not likely to adversely affect” determination is appropriate. A “no effect” determination does not require Section 7 consultation with the USFWS.
- **“May affect, but not likely to adversely affect”** means that all effects are beneficial, insignificant, or discountable. Beneficial effects have contemporaneous positive effects without any adverse effects on the species or habitat. Insignificant effects relate to the size of the impact and include those effects that are undetectable, not measurable, or cannot be evaluated and should never reach the scale where “take” occurs. Discountable effects are those extremely unlikely to occur. Based on the best scientific and commercial information available, a person would not be able to meaningfully measure, detect, or evaluate insignificant effects, or expect discountable effects to occur. This determination requires written concurrence from the USFWS.
- **“May affect, and is likely to adversely affect”** means that listed species or habitat are likely to be exposed to the action or its environmental consequences, and will respond in a negative manner to the exposure. This determination means that effects on species and habitat: (1) are not insignificant in size and avoidance of “take” cannot be guaranteed, and (2) effects are not discountable (extremely unlikely to occur). A combination of beneficial and adverse effects is still “likely to adversely affect,” even if the net effect is neutral or positive. This determination requires formal consultation with USFWS.

The following analysis identifies the project features and/or activities that are anticipated to adversely impact the species and, when feasible, quantifies such impacts.

5.1 Coastal California Gnatcatcher

The project has the potential to affect coastal California gnatcatcher through long-term direct and indirect impacts stemming from loss and shading of suitable habitat; short-term direct impacts from the temporary removal of suitable habitat during construction; and short-term construction-related noise that may affect occupied habitat areas adjacent to the project during the breeding season.

As described in Section 3.1, three coastal California gnatcatcher pairs and a fourth location with presumed occupied habitat on the University of California, San Diego



(UCSD) campus occur in the study area. Figure 3-1, Maps 1-4 show the coastal California gnatcatcher locations and their distances from the project work limits. The coastal California gnatcatcher pair near the La Jolla Colony exit off Interstate (I-) 5 is approximately 2,030 feet away from the project work limits and is not expected to be directly or indirectly affected by the project and, therefore, is excluded from further discussion. Potential impacts on the two coastal California gnatcatcher pairs located to the north and south of State Route (SR) 52 and the presumed occupied habitat on the UCSD campus are discussed in further detail in the following sections.

5.1.1 Long-term Impacts

The project would result in the loss of 5.99 acres of coastal sage scrub from improvements within and adjacent to the existing Metropolitan Transit System (MTS) right-of-way associated with new track construction, track realignment, and the construction and maintenance of associated structures and facilities (Figure 3-1, Maps 1-4). The affected areas consist primarily of disturbed coastal sage scrub located within or immediately adjacent to the existing MTS right-of-way or on the UCSD campus surrounded by developed land uses. The affected areas are not contiguous with habitat where coastal California gnatcatcher were observed; are substantially degraded; and are generally too small, degraded, and/or isolated to be considered suitable nesting habitat. Although the impacted coastal sage scrub areas may occasionally be used as foraging habitat, the long-term loss of these areas would not preclude the broader use of larger, intact suitable habitat in the area by coastal California gnatcatcher.

The pair located just north of SR 52 was observed approximately 185 feet from the project work limits (Figure 3-1, Map 1). Proposed long-term direct impacts that may affect coastal California gnatcatcher at this location include the permanent loss of 0.90 acre of disturbed coastal sage scrub, including 0.06 acre within the Multi-Habitat Planning Area (MHPA) mapped within the existing MTS right-of-way. The MHPA is the City of San Diego's "hard line" preserve system under the San Diego Multiple Species Conservation Program. The MHPA consists of biological core and linkage areas. Portions of the study area identified as biological cores and linkages include the area along Rose Creek near the SR 52 interchange and the San Diego River in the southern portion of the study area.

The pair located on the west-facing slopes south of SR 52 was observed approximately 450 feet from the project work limits, and presumed occupied habitat on the UCSD campus is located approximately 60 feet from the project work limits (Figure 3-1, Maps 3 and 4). At both of these locations, long-term direct impacts associated with the project would not affect coastal California gnatcatcher because there would be no impacts to suitable habitat in the vicinity of these locations. Long-term shading (indirect) effects would be limited to unoccupied coastal sage scrub within the existing MTS right-of-way and on the UCSD campus, where potential indirect impacts to coastal California gnatcatcher are not expected to occur. In addition, shading of suitable habitat along the existing rail right-of-way is unlikely to adversely affect the broader use of existing coastal sage scrub within and adjacent to the study area as foraging or nesting habitat by coastal California gnatcatcher.



5.1.2 Construction (Short-term) Impacts

Potential impacts to coastal California gnatcatcher also include the temporary loss of coastal sage scrub adjacent to the alignment associated with the realignment of an existing sewer line near Rose Creek (Figure 3-1, Map 1) and construction-related noise that may affect occupied habitat areas within 500 feet of project construction during the breeding season.

Coastal sage scrub that would be subject to direct temporary impacts during construction is located primarily within or along the existing MTS right-of-way or on the UCSD campus surrounded by developed land uses. During construction, 2.57 acres of coastal sage scrub (including disturbed) would be removed, including 0.23 acre of coastal sage scrub within the MHPA along Rose Creek to the north and south of SR 52.

Construction-related noise has the potential to disrupt occupied coastal California gnatcatcher habitat within 500 feet of the project during the breeding season (March 1 through August 31). Construction-related noise can disrupt foraging, nesting, and other reproductive activities. The affected areas are generally linear and are located along the edges of the existing transportation corridor.

In the vicinity of the coastal California gnatcatcher pair observed to the north of the SR 52 interchange, ambient noise levels at two long-term noise measurement locations (referred to as LT-8 and LT-9) at the top of the west-facing slopes above I-5 ranged from 58 to 64 A-weighted decibels (dBA) equivalent sound level (L_{eq}) (San Diego Association of Governments [SANDAG], 2014) (Figure 2-1). Additional measurements (referred to as ST-14 through ST-18) taken within occupied habitat downslope of and nearer to the freeway ranged between 59 and 64 dBA L_{eq} . Ambient noise levels within occupied habitat areas are, therefore, expected to regularly meet or exceed the 60-dBA L_{eq} threshold commonly used to analyze potential noise impacts to coastal California gnatcatcher and other federally listed bird species (i.e., southwestern willow flycatcher, least Bell's vireo, and light-footed clapper rail). Because of the existing high ambient noise levels measured in the vicinity, construction noise in excess of 60 dBA L_{eq} in occupied habitat areas is unlikely to have an adverse indirect effect on coastal California gnatcatcher unless construction-related noise substantially increases ambient noise levels.

Noise measurements taken near occupied habitat to the south of SR 52 and within presumed occupied habitat north of Voigt Drive on the UCSD campus suggest that existing ambient noise levels in these occupied habitat areas may be less than 60 dBA L_{eq} . South of SR 52, a short-term noise measurement site (referred to as ST-13) located approximately 50 feet east of the existing tracks and down-slope of the southernmost coastal California gnatcatcher pair measured ambient noise levels at 57 dBA L_{eq} over a 1-hour period. Within the presumed occupied habitat on the UCSD campus (referred to as ST-22, 23 and ST-24), just north of Warren Field, daytime noise levels were recorded from 48 to 51 dBA L_{eq} . As a result, occupied habitat within 500 feet of the work limits along these portions of the project may be subject to construction-related noise that increases ambient noise levels, and that may result in ambient noise levels that exceed the 60 dBA L_{eq} threshold during the breeding season.

5.1.3 Avoidance, Minimization, and Mitigation Measures

This section describes the avoidance and minimization measures as well as mitigation.

5.1.3.1 General Avoidance, Minimization, and Mitigation Measures

During construction, vegetation clearing, grading, and other ground-disturbing activities in coastal sage scrub (including disturbed) in occupied habitat within the MHPA would occur outside of the breeding season (February 15 through August 31).

The following general avoidance and minimization measures would reduce impacts to coastal California gnatcatcher:

- During final design, the project's construction footprint would be further reviewed and, where possible, the footprint would be minimized to reduce impacts to wetlands and vegetation.
- Where construction occurs adjacent to sensitive biological resources, the limits of construction would be visibly delineated through brightly colored fencing or other highly visible means. Construction crews would be directed not to encroach beyond the limits of construction.
- Best management practices would minimize dust, erosion, and runoff generated by construction activities.
- During construction, a biological monitor would be present to assist in the avoidance of impacts to native vegetation, jurisdictional aquatic resources, special-status plants and wildlife, and nesting birds. The biological monitor would provide training to construction personnel to increase awareness of the possible presence of wildlife beneath vehicles and equipment and to use best judgment to avoid killing or injuring wildlife. A biological monitor would assist with decisions or aid with moving wildlife, if necessary.
- To prevent the introduction of invasive plant species, construction vehicles and equipment would be washed prior to working in areas where sensitive vegetation communities are present adjacent to the project.

Two general mitigation measures have been identified to avoid impacts to nesting birds; these measures would also apply to coastal California gnatcatcher:

- Biologists would conduct nesting bird surveys not more than 72 hours prior to initiating construction-related ground-disturbing activities (i.e., grading or ground-clearing activities) during the breeding season (February 15 through August 31 for most species, January 15 through August 31 for raptors, or as determined by a qualified biologist). Surveys would include the disturbance zone or areas within 300 feet (500 feet for raptors) of the disturbance zone during the nesting/breeding season of native bird species potentially nesting on the site. If ground-disturbing activities are delayed, then additional pre-disturbance surveys would be conducted such that no more than 72 hours would have elapsed between the survey and the initiation of ground-disturbing activities.



- If biologists find an active nest of a native bird species, then vegetation clearing, ground-disturbing activities, and construction equipment that generates high noise or vibration levels would cease and be postponed or halted at the discretion of the biologist in consultation with California Department of Fish and Wildlife. This work cessation would be effective within a buffer area from the nest at a distance appropriate to the sensitivity of the species and the distribution of the surrounding habitat. Construction work would not resume until the biologist has determined that the nest is no longer active, the juveniles have fledged, and there is no evidence of a second attempt at nesting. Alternatively, a qualified biological monitor would be present full-time while construction is occurring within the buffer area to observe the nesting birds, and would have the authority to halt or redirect construction if the birds exhibit signs of distress. Limits of construction around active nests would be established in the field with flagging, fencing, or other appropriate barriers, and construction personnel would be instructed on the sensitivity of nest areas. The biologist would serve as a construction monitor during those periods when construction activities would occur near active nest areas to ensure that no inadvertent impacts to nesting birds occur.

5.1.3.2 Mitigation for Impacts to Suitable Habitat

In addition to the general measures identified above, specific mitigation measures have been identified to address impacts to coastal California gnatcatcher and suitable habitat (coastal sage scrub). Mitigation for long-term impacts to coastal sage scrub (including disturbed) would occur through SANDAG's *TransNet* Environmental Mitigation Program (EMP), and may include on- or off-site mitigation or the purchase of mitigation credits, as described below. Off-site mitigation is proposed at the Sage Hill site, which has been approved by the USFWS for use in mitigating upland impacts associated with the Mid-Coast Corridor Transit Project.

- On-site Mitigation: To the extent feasible, disturbed lands within or adjacent to the existing MTS right-of-way would be revegetated. Revegetated areas would be maintained and monitored for approximately five years to ensure successful reestablishment of vegetation communities.
- Off-site Mitigation: Where mitigation requirements cannot be accommodated within existing disturbed lands in the study area, impacts to sensitive vegetation communities would be mitigated elsewhere within the County of San Diego (e.g., Sage Hill site). Off-site mitigation may include creation (establishing native vegetation communities in areas that are currently disturbed, developed, or supporting non-native vegetation communities) or enhancement (improving the quality of existing areas of sensitive vegetation communities through removal of non-native species, establishment of native species, restoration of prior impacts, and protection from future disturbance).
- Mitigation Credits: In addition to on-site and off-site mitigation, impacts to sensitive vegetation communities may be mitigated through the purchase of mitigation credits. The purchase of mitigation credits could result in the long-term preservation of vegetation communities within established mitigation banks where these communities have been created and/or enhanced and are maintained in perpetuity.



Mitigation ratios would depend on the location of the impact and mitigation sites, either inside or outside of the MHPA, and would range from 1:1 to 2:1. Therefore, the long-term loss of 5.99 acres of unoccupied coastal sage scrub habitat, and shading of 0.28 acre of unoccupied coastal sage scrub habitat, would be offset through mitigation and is not expected to significantly affect coastal California gnatcatcher pairs.

Mitigation for construction (short-term) impacts to coastal California gnatcatcher suitable habitat would occur through SANDAG's *TransNet* EMP, and may include on-site mitigation, off-site mitigation, or the purchase of mitigation credits, as described above. Specific mitigation has been identified to address construction impacts to coastal sage scrub (including disturbed) through restoration of areas disturbed during construction and provision of additional compensatory mitigation, as described below.

- For short-term construction impacts to coastal sage scrub (including disturbed) within the MHPA, mitigation is proposed at a 1:1 ratio if the mitigation occurs outside the MHPA, and at a 1:1 ratio if mitigation occurs within the MHPA. For short-term impacts to coastal sage scrub (including disturbed) outside the MHPA, mitigation is proposed at a 1.5:1 ratio if the mitigation occurs outside the MHPA, and at a 1:1 ratio if the mitigation occurs within the MHPA.

Therefore, the temporary loss of 2.57 acres of coastal sage scrub is not expected to significantly affect coastal California gnatcatcher pairs.

5.1.3.3 Mitigation for Indirect Construction Noise Impacts

The following measure has been identified to minimize or avoid construction noise impacts to coastal California gnatcatcher during the breeding season.

- Construction-related noise levels in coastal California gnatcatcher occupied habitat within 500 feet of construction activity would not exceed 60 dBA L_{eq} (1 hour) or pre-construction ambient noise levels, whichever is greater, during the breeding season. Project construction within 500 feet of occupied habitat would occur outside of the breeding season if possible. If necessary, construction activities during the breeding season would be managed to limit noise levels in occupied habitat within 500 feet of the project, or noise attenuation measures, such as temporary sound walls, would be implemented to reduce noise levels below 60 dBA L_{eq} (1 hour) or below existing ambient noise levels, whichever is greater.

With the implementation of breeding season avoidance, noise minimization, and/or noise attenuation measures, potential short-term indirect construction noise impacts are not expected to significantly affect coastal California gnatcatcher pairs.

5.1.4 Determination of Effect

With implementation of the proposed avoidance, minimization, and mitigation measures described in the previous sections, potential adverse effects associated with the project are considered to be insignificant or discountable. As a result, the project **“may affect, but is not likely to adversely affect”** the coastal California gnatcatcher.

5.2 Southwestern Willow Flycatcher and Least Bell's Vireo

Although previously-conducted focused surveys for these species were negative, potentially suitable riparian habitat occurs within the project impact area in the San Diego River, Rose Creek, and on UCSD campus. Additionally, a single male least Bell's vireo has been detected during 2014 focused surveys, which are currently in progress. These species could move into the area prior to construction. If these species are present, potential impacts would include long-term direct and indirect impacts stemming from loss and shading of suitable habitat, short-term direct and indirect impacts from the temporary removal of suitable habitat during construction, and construction-related noise that may affect occupied habitat areas adjacent to the project during the breeding season.

As described in Section 3.2, suitable habitat in the study area occurs in the San Diego River, in Rose Creek and on the UCSD campus. Figure 3-1, Maps 5-7 show the locations of suitable riparian habitat that would be impacted by the project and the location of the single least Bell's vireo observed.

5.2.1 Long-term Impacts

Implementation of the project would result in 0.68 acre of long-term direct impacts to potentially suitable riparian habitat for least Bell's vireo and southwestern willow flycatcher in the San Diego River, Rose Creek, and on the UCSD campus, including 0.19 acre within the MHPA. Potentially suitable riparian habitat includes southern riparian forest and southern willow scrub (including disturbed), as well as contiguous areas of mulefat scrub, disturbed wetlands (including disturbed herbaceous wetland), and Arundo-dominated riparian. The majority of long-term direct impacts would occur to areas located within or adjacent to the existing MTS right-of-way.

Shading of existing riparian habitat would occur at bridge crossings over the San Diego River and Rose Creek, and beneath a portion of elevated track along Voigt Drive to the east of I-5 on the UCSD campus. Long-term indirect impacts include shading effects on 0.76 acre of riparian habitat in the San Diego River, Rose Creek, and on UCSD campus.

If the single male least Bell's vireo in Rose Creek establishes a nesting territory this year, then long-term direct impacts would include less than 0.01 acre of occupied habitat permanently displaced by bridge piers for the project. Long-term indirect impacts would include shading effects on 0.19 acre of occupied habitat in Rose Creek. However, due to the extent of contiguous habitat in downstream portions of the creek to the west of the existing rail bridge and Santa Fe Street bridge, these impacts would not result in the loss of a nesting territory.

5.2.2 Construction (Short-term) Impacts

If present, potential impacts to least Bell's vireo and southwestern willow flycatcher would also include the temporary loss of riparian habitat associated with construction at bridge crossings. During construction, 2.13 acres of riparian habitat would be temporarily impacted, including 1.35 acres within the MHPA.



If the single male least Bell's vireo in Rose Creek establishes a nesting territory this year, then short-term construction impacts would include the temporary loss of 0.09 acre of occupied habitat in Rose Creek.

If either species is present in the study area, construction-related noise that may exceed 60 dBA L_{eq} has the potential to disrupt occupied least Bell's vireo and southwestern willow flycatcher habitat within 500 feet of the project during the breeding season (March 1 through August 31), which can disrupt foraging, nesting, and other reproductive activities. The affected areas are generally linear and are located in adjacent suitable riparian habitat areas shown on Figure 3-1, Maps 5-7, along the edges of an existing transportation corridor. Suitable habitat within 500 feet of the work limits in the San Diego River and along Rose Creek may be subject to construction-related noise that substantially increases ambient noise levels.

5.2.3 Avoidance, Minimization, and Mitigation Measures

This section describes the avoidance and minimization measures as well as mitigation.

5.2.3.1 General Avoidance, Minimization, and Mitigation Measures

The avoidance and minimization measures described in Section 5.1.3.1 would also reduce impacts to southwestern willow flycatcher and least Bell's vireo.

During construction, vegetation clearing, grading, and other ground-disturbing activities in occupied riparian habitat (including disturbed) in the MHPA would occur outside of the breeding season (March 1 through August 31)

5.2.3.2 Mitigation for Impacts to Suitable Habitat

Mitigation for long-term impacts to riparian habitat (including disturbed) would occur through SANDAG's *TransNet* EMP. For impacts to riparian habitat in the San Diego River, off-site mitigation is proposed at the Mast Park Mitigation Site in the City of Santee, which has been approved by the USFWS for use in mitigating wetland impacts associated with another transportation project, or at another site identified during the permitting process. For impacts in the Rose Creek watershed, mitigation includes implementing a portion of the restoration and creation opportunities identified in the *Rose Creek Watershed Wetland, Riparian and Water Quality Restoration Opportunities Analysis* (San Diego Earthworks, 2012) in coordination with the Rose Creek Watershed Association. Additional mitigation sites may be identified through agency consultation and through the *TransNet* EMP. Mitigation for long-term impacts to riparian habitat is proposed at a 3:1 ratio, including a minimum 1:1 ratio of habitat creation to achieve no net loss. Therefore, the long-term loss of 0.68 acre of unoccupied riparian habitat, and shading of 0.76 acre of unoccupied riparian habitat, would be offset through mitigation and is not expected to significantly affect least Bell's vireo or southwestern willow flycatcher. If the single male least Bell's vireo establishes a nesting territory this year, then 0.19 acre of indirect shading effects, 0.09 acre of temporary construction impacts, and the permanent loss of less than 0.01 acre of disturbed wetlands in Rose Creek would be considered impacts to occupied habitat.

Mitigation for temporary impacts to riparian habitat (including disturbed) during construction would occur by restoring affected areas to pre-existing habitat conditions (or



better) upon project completion. Furthermore, the two species have not been recorded breeding in this area. Therefore, the temporary loss of 2.13 acres of riparian habitat is not expected to significantly affect least Bell's vireo or southwestern willow flycatcher.

5.2.3.3 Mitigation for Indirect Construction Noise Impacts

The following measure has been identified to minimize or avoid construction noise impacts to least Bell's vireo and southwestern willow flycatcher during the breeding season.

- To avoid potential adverse impacts to least Bell's vireo and southwestern willow flycatcher from construction-related noise, project construction within 500 feet of occupied habitat would be timed to occur outside of the breeding season if possible. If project construction within 500 feet of occupied habitat must occur during the breeding season, construction-related noise within the occupied habitat areas would not exceed 60 dBA L_{eq} (1 hour) or pre-construction ambient noise levels, whichever is greater, during the breeding season. If necessary, construction activities during the breeding season would be managed to limit noise levels in occupied habitat within 500 feet of the project, or noise attenuation measures would be implemented to reduce noise levels below 60 dBA L_{eq} (1 hour) or below existing ambient noise levels, whichever is greater.

With the implementation of breeding season avoidance, noise minimization, and/or noise attenuation measures, potential short-term indirect construction noise impacts are not expected to significantly affect least Bell's vireo and southwestern willow flycatcher.

5.2.4 Determination of Effect

With implementation of the proposed avoidance, minimization, and mitigation measures described in the previous sections, potential adverse effects associated with the project are considered to be insignificant or discountable. As a result, the project **“may affect, but is not likely to adversely affect”** least Bell's vireo and southwestern willow flycatcher.

5.3 Light-footed Clapper Rail

Although a focused survey conducted in 2014 for light-footed clapper rail was negative, the species could forage and/or nest in marginal quality habitat in the San Diego River to the west of the existing Los Angeles—San Diego—San Luis Obispo Rail Corridor Agency bridge, and may move through the study area along the San Diego River main channel (Figure 3-1, Map 5). If light-footed clapper rail were to move into the area prior to construction, potential impacts would be limited to short-term indirect impacts from construction-related noise that may affect suitable habitat adjacent to the project during the breeding season.

5.3.1 Long-term Impacts

As suitable foraging and/or nesting habitat does not occur within the project impact area at the San Diego River, and because movement along the San Diego River main channel would not be affected by the San Diego River bridge for the project, no long-term impacts to light-footed clapper rail or suitable habitat would occur.

5.3.2 Construction (Short-term) Impacts

Implementation of the project would result in construction noise in adjacent suitable marsh habitat areas to the west of the existing Los Angeles—San Diego—San Luis Obispo Rail Corridor Agency bridge which could disrupt foraging, nesting, and reproductive activities during the breeding season if this species is determined to be present prior to construction. Suitable habitat within 500 feet of the work limits in the San Diego River may be subject to construction-related noise that substantially increases ambient noise levels, and that may exceed the 60-dBA Leq threshold during the breeding season. As no equipment or work is proposed within the San Diego River main channel, movement of clapper rails through the study area would not be affected.

5.3.3 Avoidance, Minimization, and Mitigation Measures

This section describes the avoidance and minimization measures as well as mitigation.

5.3.3.1 General Avoidance, Minimization, and Mitigation Measures

The avoidance and minimization measures described in Section 5.1.3.1 would also reduce impacts to light-footed clapper rail.

5.3.3.2 Mitigation for Indirect Construction Noise Impacts

The following measures have been identified to minimize or avoid construction impacts to light-footed clapper rail.

- During construction, a movement corridor for light-footed clapper rail would be maintained along the San Diego River main channel to allow clapper rails to move through the construction area, if present. The movement corridor would include exclusionary fencing along the project limits on either side of the flow channel to prevent clapper rails from entering construction areas, if present.
- To avoid potential adverse impacts to light-footed clapper rail from construction-related noise, project construction within 500 feet of occupied habitat would be timed to occur outside of the breeding season, if possible. If project construction within 500 feet of occupied habitat must occur during the breeding season, construction-related noise within the occupied habitat areas would not exceed 60 dBA L_{eq} (1-hour) or pre-construction ambient noise levels, whichever is greater, during the breeding season. If necessary, construction activities would be managed to limit noise levels in occupied habitat within 500 feet of the project or noise attenuation measures would be implemented to reduce noise levels below 60 dBA L_{eq} (1-hour) or below existing ambient noise levels, whichever is greater.

With the implementation of the avoidance and minimization measures, potential direct and indirect impacts associated with construction activities are not expected to significantly affect light-footed clapper rail.

5.3.4 Determination of Effect

With implementation of the proposed avoidance, minimization, and mitigation measures described in the previous sections, potential adverse effects associated with the project



are considered to be insignificant or discountable. As a result, the project **“may affect, but is not likely to adversely affect”** light-footed clapper rail.

5.4 San Diego Fairy Shrimp

The project has the potential to affect San Diego fairy shrimp through long-term direct impacts and short-term indirect impacts during construction. As described in Section 3.4, San Diego fairy shrimp are present in two ephemeral basins in the study area. Figure 3-1, Map 8 shows the location of the two basins within the MTS right-of-way between Tecolote Road and Clairemont Drive.

5.4.1 Long-term Impacts

The project would result in the loss of an occupied basin from improvements within the existing MTS right-of-way associated with new track construction. Basin II is located to the east of the existing tracks, and measured approximately 76 feet long and 5.5 feet wide at the time San Diego fairy shrimp was observed, with an area of approximately 425 square feet and a maximum depth of 10 inches. In addition to the basin area itself, the basin microwatershed would also be directly impacted by grading and other improvements associated with new track construction.

A second occupied basin, Basin BB, is located within the MTS right-of-way to the west of the existing tracks but would be avoided by the project. Basin BB is located approximately 50 feet west of the project development footprint (72 feet from the project alignment), and is separated hydrologically from the study area by the existing tracks. No long-term impacts to San Diego fairy shrimp in Basin BB and/or the associated basin's microwatershed would occur.

5.4.2 Construction (Short-term) Impacts

During construction, dust could indirectly impact San Diego fairy shrimp in Basin BB. Dust accumulating within the basin, either during the wet or dry season, could adversely affect the emergence of cysts during the wet season. During the wet season, dust settling in the basin could also increase turbidity of the pool and disrupt foraging and reproductive activities. Because Basin BB and its associated basin microwatershed are separated from the study area by the existing tracks, San Diego fairy shrimp at this location would not be affected by erosion and/or runoff during construction.

5.4.3 Avoidance, Minimization, and Mitigation Measures

This section describes the avoidance and minimization measures as well as mitigation.

5.4.3.1 General Avoidance, Minimization, and Mitigation Measures

The avoidance and minimization measures related to water quality, biological monitoring, and implementation of best management practices described in Section 5.1.3.1 would also reduce impacts to San Diego fairy shrimp.

5.4.3.2 Mitigation for Impacts to Occupied Areas

In addition to the general avoidance and minimization measures, the following measure has been identified to avoid indirect impacts to the San Diego fairy shrimp in Basin BB.



- Indirect construction impacts to the San Diego fairy shrimp in Basin BB, which is located outside of the project impact area, would be avoided through the designation of a buffer. The buffer would be established to prevent construction from indirectly affecting the pool and its associated watershed.

Impacts to ephemeral basins occupied by San Diego fairy shrimp, including Basin II, are proposed to be mitigated at a 2:1 ratio through restoration and/or enhancement of vernal pools within west Otoy Mesa on property purchased for vernal pool mitigation or within another approved mitigation area acceptable to the USFWS. Mitigation is proposed at a 2:1 ratio for impacts to ephemeral basins supporting San Diego fairy shrimp, or as otherwise agreed to by the USFWS. Restoration would be conducted at a minimum 1:1 ratio to achieve a no-net-loss of San Diego fairy shrimp habitat; a combination of restoration and enhancement would make up the remaining mitigation.

SANDAG would restore/enhance vernal pools suitable to support San Diego fairy shrimp within the west Otoy Mesa on the 40-acre Anderprizes parcel, which was previously acquired for future mitigation of vernal pools, and which has been approved by the USFWS for mitigation of impacts to San Diego fairy shrimp that would result from the Mid-Coast Corridor Transit Project. SANDAG would develop a vernal pool restoration plan subject to approval by the USFWS prior to project construction.

Additional mitigation locations may be identified through consultation with USFWS. Mitigation at other sites would include the implementation of a vernal pool restoration, enhancement, and/or preservation plan subject to the approval by USFWS prior to project construction. SANDAG would ensure that the mitigation areas would be conserved in perpetuity, including providing financial assurances and/or securing conservation easements, as necessary for USFWS approval.

5.4.4 Determination of Effect

Because implementation of the project would result in the loss of an occupied basin, implementation of the project **“may affect, and is likely to adversely affect”** San Diego fairy shrimp.



6.0 RELEVANT REPORTS PREPARED

The *Mid-Coast Corridor Transit Project Draft Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report* (SEIS/SEIR) (San Diego Association of Governments, 2013a) and supporting technical reports were circulated for a 60-day public review and comment period between May 17, 2013 and July 17, 2013. The administrative draft of the Final SEIS/SEIR has been completed and is currently under review by the Federal Transit Administration. Circulation of the Final SEIS/SEIR for public review is expected to occur in summer 2014. Focused survey reports for the coastal California gnatcatcher (September 22, 2010; October 4, 2012), San Diego fairy shrimp (September 15, 2011; October 4, 2012), and least Bell's vireo and southwestern willow flycatcher (September 22, 2010, January 25, 2010) are included in Appendix D.



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Appendix A

Mid-Coast Observed Plant Species

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APPENDIX A MID-COAST OBSERVED PLANT SPECIES

VASCULAR PLANT SPECIES

EPHEDRACEAE – EPHEDRA FAMILY

Ephedra californica – desert tea

PINACEAE – PINE FAMILY

Pinus sp. – pine

AIZOACEAE – FIG-MARIGOLD FAMILY

- * *Aptenia cordifolia* – baby sun rose
- * *Carpobrotus edulis* – Hottentot-fig
- * *Mesembryanthemum crystallinum* – crystalline iceplant
- * *Mesembryanthemum nodiflorum* – slender-leaved iceplant

ANACARDIACEAE – SUMAC FAMILY

- Rhus integrifolia* – lemonadeberry
- Rhus ovata* – sugar bush
- * *Schinus molle* – Peruvian pepper tree
- * *Schinus terebinthifolius* – Brazilian pepper tree
- Toxicodendron diversilobum* – western poison oak

APIACEAE – CARROT FAMILY

- * *Apium graveolens* – celery
- * *Conium maculatum* – poison-hemlock
- Daucus pusillus* – rattlesnake weed
- * *Foeniculum vulgare* – fennel
- Sanicula* sp. – sanicle

APOCYNACEAE – DOGBANE FAMILY

- * *Vinca major* – big periwinkle

ASTERACEAE – SUNFLOWER FAMILY

- Achillea millefolium* – yarrow, milfoil
- Ambrosia psilostachya* – western ragweed
- Artemisia californica* – California sagebrush
- Artemisia dracunculus* – tarragon
- Artemisia palmeri* – San Diego sagewort
- Baccharis pilularis* – chaparral broom, coyote brush
- Baccharis salicifolia* – mulefat, seep-willow, water-wally
- Baccharis sarothroides* – broom baccharis
- * *Bidens pilosa* – common beggar-ticks, Spanish-needles
- * *Carduus pycnocephalus* – Italian thistle
- * *Centaurea melitensis* – tocalote
- * *Matricaria matricarioides* – pineapple weed, rayless chamomile
- * *Glebionis coronaria* – garland or crown daisy
- * *Cirsium vulgare* – bull thistle
- Cirsium* sp. – thistle



- * *Conyza bonariensis* – flax-leaved fleabane
- Conyza canadensis* – horseweed
- * *Cynara cardunculus* – artichoke thistle
- Deinandra [=Hemizonia] fasciculata* – fascicled tarweed
- Encelia californica* – California encelia
- Eriophyllum confertiflorum* – long-stem golden yarrow
- Logfia filaginoides* – California filago
- Gnaphalium bicolor* – bicolor cudweed
- Gnaphalium californicum* – California everlasting
- Pseudognaphalium beneolens* – white everlasting
- Pseudognaphalium microcephalum* – fragrant everlasting
- * *Gnaphalium luteoalbum* – white-head cudweed
- Gnaphalium palustre* – lowland cudweed
- Grindelia hirsutula* – gum plant
- * *Hedypnois cretica* – Crete hedypnois
- Heterotheca grandiflora* – telegraph weed
- * *Hypochaeris glabra* – smooth cat's-ear
- Isocoma menziesii* ssp. *menziesii* – spreading goldenbush
- Isocoma menziesii* var. *decumbens* – decumbent goldenbush
- Isocoma menziesii* var. *vernonioides* – coastal goldenbush
- Iva hayesiana* – San Diego marsh-elder
- * *Lactuca serriola* – prickly lettuce
- * *Helminthotheca echioides* – bristly ox-tongue
- * *Picris echioides* – bristly oxtongue
- Rafinesquia californica* – California chicory
- * *Senecio vulgaris* – common groundsel
- * *Silybum marianum* – milk thistle
- * *Sonchus asper* ssp. *asper* – prickly sow thistle
- * *Sonchus oleraceus* – common sow thistle
- Stephanomeria* sp. – wreath-plant
- Stephanomeria exigua* ssp. *deanei* – small wreath-plant
- Sephanomeria virgata* ssp. *virgata* – virgate wreath-plant
- Tetradymia comosa* – cotton-thorn
- Xanthium strumarium* – cocklebur

BETULACEAE – BIRCH FAMILY

Alnus rhombifolia – white alder

BORAGINACEAE – BORAGE FAMILY

Heliotropium curassavicum – salt heliotrope

BRASSICACEAE – MUSTARD FAMILY

- * *Brassica nigra* – black mustard
- * *Lepidium draba* ssp. *draba* – hoary cress
- * *Lepidium didymum* – swine cress
- * *Hirschfeldia incana* – short-pod mustard
- Lepidium* sp. – peppergrass
- * *Lepidium latifolium* – broadleaved pepperweed
- * *Lobularia maritima* – sweet alyssum



- * *Raphanus sativus* – radish
- Nasturtium officinale* – water cress

CACTACEAE – CACTUS FAMILY

- * *Opuntia* sp. – cactus
- Mammillaria dioica* – fish-hook cactus
- Cylindropuntia californica* – snake cholla
- Opuntia littoralis* – coastal prickly-pear

CAPRIFOLIACEAE – HONEYSUCKLE FAMILY

- Sambucus nigra* – blue elderberry

CARYOPHYLLACEAE – PINK FAMILY

- * *Silene gallica* – common catchfly
- * *Spergularia bocconeii* – Boccone's sand spurry

CHENOPODIACEAE – GOOSEFOOT FAMILY

- Atriplex* sp. – silverscale
- Atriplex canescens* – four-wing saltbush/shadscale
- Atriplex nummularia* – old man saltbush
- * *Atriplex semibaccata* – Australian saltbush
- * *Chenopodium album* – pigweed, lamb's-quarters
- * *Chenopodium murale* – nettle-leaf goosefoot
- * *Salsola tragus* – Russian thistle, tumbleweed

CLEOMACEAE – CLEOME FAMILY

- Isomeris arborea* – bladderpod

CONVOLVULACEAE – MORNING-GLORY FAMILY

- Calystegia macrostegia* – morning-glory

CRASSULACEAE – STONECROP FAMILY

- Crassula connata* – pygmy-weed
- * *Crassula ovata* – jade tree
- Dudleya lanceolata* – lanceleaf or coastal dudleya
- Dudleya pulverulenta* – chalky live-forever
- Dudleya virens* ssp. *virens* – bright green dudleya

CUCURBITACEAE – GOURD FAMILY

- Cucurbita palmata* – coyote melon
- Marah macrocarpus* var. *macrocarpus* – manroot, wild-cucumber

CYPERACEAE – SEDGE FAMILY

- Bolboschoenus maritimus* – tuberous bulrush
- Schoenoplectus californicus* – California tule

EUPHORBIACEAE – SPURGE FAMILY

- * *Chamaesyce maculata* – spotted spurge
- Croton setigerus* – doveweed



- * *Euphorbia lathyris* – caper spurge, gopher plant
- * *Euphorbia peplus* – petty spurge
- Euphorbia* sp. – spurge
- * *Ricinus communis* – castor bean

FABACEAE – PEA FAMILY

- * *Acacia cyclops* – western coastal wattle
- * *Acacia longifolia* – Sydney golden or golden wattle
- * *Acacia redolens* – desert carpet
- Astragalus trichopodus* var. *lonchus* – ocean locoweed
- Hoffmannseggia glauca* – pig-nut, hog potato
- Acmispon americanus* – Spanish-clover
- Acmispon glaber* – deerweed
- * *Cytisus striatus* – striated broom
- * *Lathyrus* sp. – sweet pea
- Lupinus succulentus* – arroyo lupine
- * *Medicago polymorpha* – California burclover
- * *Melilotus albus* – white sweetclover
- * *Melilotus indica* – sourclover
- * *Robinia pseudoacacia* – common locust
- * *Vicia villosa* – hairy vetch

FAGACEAE – OAK FAMILY

- Quercus agrifolia* – coast live oak, encina
- Quercus berberidifolia* – scrub oak

GERANIACEAE – GERANIUM FAMILY

- * *Erodium botrys* – long-beak filaree/storksbill
- * *Erodium cicutarium* – redstem filaree
- * *Geranium carolinianum* – Carolina geranium

GROSSULARIACEAE – CURRANT FAMILY

- Ribes speciosum* – fuschia-flowered gooseberry

IRIDACEAE – IRIS FAMILY

- Sisyrinchium bellum* – blue-eyed-grass

LAMIACEAE – MINT FAMILY

- * *Marrubium vulgare* – horehound
- Salvia apiana* - white sage
- Salvia mellifera* – black sage
- Stachys ajugoides* var. *rigida* – hillside hedge-nettle
- Trichostema lanceolatum* – vinegar weed

LYTHRACEAE – LOOSESTRIFE FAMILY

- * *Lythrum hyssopifolia* – grass poly



MALVACEAE – MALLOW FAMILY

- Malacothamnus fasciculatus* – chaparral bushmallow
- * *Malva parviflora* – cheeseweed, little mallow
- Sidalcea sparsifolia* – checker-bloom
- Sidalcea neomexicana* – salt spring checkerbloom

MYRSINACEAE – MIRSINE FAMILY

- * *Anagallis arvensis* – poor man's weatherglass, scarlet pimpernel

MYRTACEAE – MYRTLE FAMILY

- * *Eucalyptus* spp. – eucalyptus
- * *Eucalyptus globulus* – blue gum
- * *Melaleuca viminalis* – weeping bottle brush

OLEACEAE – OLIVE FAMILY

- * *Olea europaea* – olive

ONAGRACEAE – EVENING-PRIMROSE FAMILY

- Camissonia* sp. – camissonia
- Clarkia purpurea* ssp. *quadrivulnera* – four-spot
- Epilobium ciliatum* ssp. *ciliatum* – willow herb
- Oenothera elata* ssp. *hookeri* – great marsh evening-primrose

OXALIDACEAE – WOOD-SORREL FAMILY

- * *Oxalis pes-caprae* – Bermuda buttercup

PHRYMACEAE – LOPSEED FAMILY

- Mimulus aurantiacus* – coast monkey flower, bush monkey flower

PLANTAGINACEAE – PLANTAIN FAMILY

- Antirrhinum nuttallianum* ssp. *nuttallianum* – Nuttall's snapdragon

PLATANACEAE – SYCAMORE FAMILY

- Platanus racemosa* – western sycamore

PLUMBAGINACEAE – LEADWORT FAMILY

- * *Limonium perezii* – Perez's sea lavender
- * *Limonium* sp. – marsh-rosemary

POLYGONACEAE – BUCKWHEAT FAMILY

- Eriogonum elongatum* var. *elongatum* – tall buckwheat
- Eriogonum fasciculatum* – California buckwheat
- Persicaria hydropiperoides* – waterpepper
- * *Rumex crispus* – curly dock
- Rumex salicifolius* – willow dock

PRIMULACEAE – PRIMROSE FAMILY

- Dodecatheon clevelandii* ssp. *clevelandii* – Padre's shooting star



RHAMNACEAE – BUCKTHORN FAMILY

Rhamnus crocea – spiny redberry

ROSACEAE – ROSE FAMILY

Heteromeles arbutifolia – toyon, Christmas berry

RUBIACEAE – MADDER FAMILY

* *Galium aparine* – goose grass

SALICACEAE – WILLOW FAMILY

Populus fremontii – alamo or Fremont cottonwood

Salix gooddingii – Goodding's black willow

Salix lasiolepis – arroyo willow

Salix laevigata – red willow

SIMAROUBACEAE – QUASSIA FAMILY

* *Ailanthus altissima* – tree of heaven

SOLANACEAE – NIGHTSHADE FAMILY

Datura wrightii – jimson weed

* *Nicotiana glauca* – tree tobacco

Solanum douglasii – Douglas' nightshade

* *Solanum elaeagnifolium* – silverleaf nightshade

Solanum parishii – Parish's nightshade

TAMARICACEAE – TAMARISK FAMILY

* *Tamarix* spp. – tamarisk

VERBENACEAE – VERVAIN FAMILY

Verbena lasiostachys var. *lasiostachys* – western verbena

ANGIOSPERMS (MONOCOTS)

ARECACEAE – PALM FAMILY

* *Phoenix canariensis* – Canary Island date palm

* *Washingtonia robusta* – Mexican fan palm

ASPHODELACEAE – ASPHODELINE FAMILY

* *Asphodelus fistulosus* – hollow-stem asphodel

CYPERACEAE – SEDGE FAMILY

Carex sp. – sedge

Cyperus esculentus – yellow nutsedge

* *Cyperus involucratus* – African umbrella plant

Eleocharis macrostachya – pale spike-sedge



JUNCACEAE – RUSH FAMILY

Juncus acutus ssp. *leopoldii* – southwestern spiny rush

Juncus bufonius var. *bufonius* – toad rush

Juncus xiphioides – iris-leaf rush

IRIDACEAE – IRIS FAMILY

Iris sp. – iris

POACEAE – GRASS FAMILY

Achnatherum coronatum – giant stipa

Agrostis pallens – small-leaf bent

* *Agrostis stolonifera* – creeping bentgrass

* *Arundo donax* – giant reed

* *Avena barbata* – slender wild oat

* *Avena fatua* – wild oat

* *Brachypodium distachyon* – purple falsebrome

* *Bromus diandrus* – ripgut grass

* *Bromus hordeaceus* – soft chess

* *Bromus madritensis* – foxtail chess

* *Cortaderia selloana* – pampas grass

* *Crypsis schoenoides* – swamp prickly grass

* *Cynodon dactylon* – Bermuda grass

Distichlis spicata – saltgrass

* *Echinochloa crus-galli* – common barnyard grass

* *Gastridium ventricosum* – nit grass

* *Hordeum murinum* – barley

Leymus condensatus – giant wild rye

Leymus tritocoides – beardless wild ryegrass

* *Lolium multiflorum* – Italian ryegrass

* *Lolium perenne* – perennial ryegrass

Melica imperfecta – coast range melic

Nassella pulchra – purple needlegrass

* *Pennisetum clandestinum* – kikuyugrass

* *Pennisetum setaceum* – African fountain grass

* *Piptatherum miliaceum* – smilgrass

* *Phalaris* sp. – Phalaris

Poa secunda ssp. *secunda* – one-sided bluegrass

* *Polypogon monspeliensis* – annual beard grass

* *Vulpia myuros* – rattail fescue

THEMIDACEAE – BRODIAEA FAMILY

Brodiaea orcuttii – Orcutt's brodiaea

Dichelostemma capitatum ssp. *capitatum* – blue dicks

TYPHACEAE – CATTAIL FAMILY

Typha spp. – cattail

Typha domingensis – slender cattail



URTICACEAE – NETTLE FAMILY

Urtica dioica ssp. *holosericea* – hoary nettle

Note: * Signifies non-native species.



MID-COAST CORRIDOR
TRANSIT PROJECT

Appendix B

Mid-Coast Observed Wildlife Species

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APPENDIX B MID-COAST OBSERVED WILDLIFE SPECIES

WILDLIFE SPECIES – VERTEBRATES

AMPHIBIANS

PLETHODONTIDAE – LUNGLESS SALAMANDERS

Batrachoseps major – garden slender salamander

PIPIDAE – TONGUELESS FROGS

* *Xenopus laevis* – African clawed frog

BUFONIDAE – TRUE TOADS

Anaxyrus boreas – western toad

HYLIDAE – TREEFROGS

Pseudacris hypochondriaca – Baja California treefrog

REPTILES

EMYDIDAE – BOX AND POND TURTLES

* *Pseudemys scripta* – red-eared slider

IGUANIDAE – IGUANID LIZARDS

Sceloporus occidentalis – western fence lizard

Uta stansburiana – common side-blotched lizard

COLUBRIDAE – COLUBRID SNAKES

Pituophis cantifer – gopher snake

VIPERIDAE – VIPERS

Crotalus oreganus – western rattlesnake

FISHES

CYPRINIDAE – CARP

* *Cyprinidae* sp. – carp

BIRDS

PODICIPEDIDAE – GREBES

Podilymbus podiceps – pied-billed grebe

PHALOCROCORACIDAE – CORMORANTS

Phalacrocorax auritus – double-crested cormorant

Phalacrocorax sp. – cormorant



ARDEIDAE – HERONS

Ardea herodias – great blue heron
Butorides virescens – green heron
Ardea alba – great egret
Egretta thula – snowy egret
Nycticorax nycticorax – black-crowned night-heron

ANATIDAE – DUCKS, GEESE, AND SWANS

Anas platyrhynchos – mallard

ACCIPITRIDAE – HAWKS

Accipiter cooperii – Cooper's hawk
Buteo jamaicensis – red-tailed hawk
Buteo lineatus – red-shouldered hawk
Elanus leucurus – white-tailed kite

FALCONIDAE – CARACARAS AND FALCONS

Falco sparverius – American kestrel

ODONTOPHORIDAE – NEW WORLD QUAILS

Callipepla californica – California quail

RALLIDAE – RAILS, GALLINULES, AND COOTS

Fulica americana – American coot
Gallinula chloropus – common moorhen
Porzana carolina – sora

CHARADRIIDAE – LAPWINGS AND PLOVERS

Charadrius vociferus – killdeer

SCOLOPACIDAE – SANDPIPERS, PHALAROPES, AND ALLIES

Numenius americanus – long-billed curlew

LARIDAE – GULLS, TERNS, AND SKIMMERS

Larus sp. – gull
Sterna sp. – tern

COLUMBIDAE – PIGEONS AND DOVES

* *Columba livia* – rock dove
Zenaida macroura – mourning dove

TYTONIDAE – BARN OWLS

Tyto alba – barn owl

APODIDAE – SWIFTS

Aeronautes saxatalis – white-throated swift



TROCHILIDAE – HUMMINGBIRDS

Calypte anna – Anna’s hummingbird
Calypte costae – Costa’s hummingbird

ALCEDINIDAE – KINGFISHERS

Ceryle alcyon – belted kingfisher

PICIDAE – WOODPECKERS

Colaptes auratus – northern flicker
Melanerpes formicivorus – acorn woodpecker
Picoides nuttallii – Nuttall’s woodpecker

TYRANNIDAE – TYRANT FLYCATCHERS

Contopus cooperi – olive-sided flycatcher
Empidonax difficilis – Pacific-slope flycatcher
Myiarchus cinerascens – ash-throated flycatcher
Sayornis nigricans – black phoebe
Tyrannus vociferans – Cassin’s kingbird
Tyrannus verticalis – western kingbird

HIRUNDINIDAE – SWALLOWS

Petrochelidon pyrrhonota – cliff swallow
Stelgidopteryx serripennis – northern rough-winged swallow
Tachycineta bicolor – tree swallow

CORVIDAE – JAYS AND CROWS

Aphelocoma californica – western scrub-jay
Corvus brachyrhynchos – American crow
Corvus corax – common raven

PARIDAE – TITMICE

Baeolophus inornatus – oak titmouse

AEGITHALIDAE – BUSHTITS

Psaltirparus minimus – bushtit

TROGLODYTIDAE – WRENS

Thryomanes bewickii – Bewick’s wren
Troglodytes aedon – house wren

REGULIDAE – KINGLETS

Regulus calendula – ruby-crowned kinglet

SYLVIIDAE– SYLVIID WARBLERS

Chamaea fasciata – wrentit

MIMIDAE – THRASHERS

Mimus polyglottos – northern mockingbird
Toxostoma redivivum – California thrasher



STURNIDAE – STARLINGS

- * *Sturnus vulgaris* – European starling

PARULIDAE – WOOD WARBLERS

- Dendroica coronata* – yellow-rumped warbler
- Dendroica petechia* – yellow warbler
- Dendroica townsendi* – Townsend's warbler
- Geothlypis trichas* – common yellowthroat
- Icteria virens* – yellow-breasted chat
- Vermivora celata* – orange-crowned warbler
- Wilsonia pusilla* – Wilson's warbler

EMBERIZIDAE – BUNTINGS AND SPARROWS

- Junco oreganus* – Oregon junco
- Melospiza melodia* – song sparrow
- Pipilo crissalis* – California towhee
- Pipilo maculatus* – spotted towhee
- Spizella passerina* – chipping sparrow
- Zonotrichia leucophrys* – white-crowned sparrow

CARDINALIDAE – CARDINALS AND ALLIES

- Phaeucticus melanocephalus* – black-headed grosbeak

ICTERIDAE – BLACKBIRDS AND ORIOLES

- Agelaius phoeniceus* – red-winged blackbird
- Euphagus cyanocephalus* – Brewer's blackbird
- Icterus cucullatus* – hooded oriole
- Icterus bullockii* – Bullock's oriole
- Molothrus ater* – brown-headed cowbird
- Quiscalus mexicanus* – great-tailed grackle

POLIOPTILIDAE – GNATCATCHERS AND GNATWRENS

- Polioptila californica* – coastal California gnatcatcher

TURDIDAE – THRUSHES AND BABBLERS

- Sialia mexicana* – western bluebird
- Turdus migratorius* – American robin

VIREONIDAE – VIREOS

- Vireo gilvus* – warbling vireo
- Vireo huttoni* – Hutton's vireo

THRAUPIDAE – TANAGERS

- Piranga ludoviciana* – western tanager

FRINGILLIDAE – FINCHES

- Carpodacus mexicanus* – house finch
- Carduelis psaltria* – lesser goldfinch



Carduelis tristis – American goldfinch

PSITTACIDAE – PARROTS

* *Amazona viridigenalis* – red-crowned parrot

MAMMALS

DIDELPHIDAE – NEW WORLD OPOSSUMS

Didelphis virginiana – Virginia opossum

LEPORIDAE – HARES AND RABBITS

Sylvilagus bachmani – brush rabbit

SCIURIDAE – SQUIRRELS

Spermophilus beecheyi – California ground squirrel

GEOMYIDAE – POCKET GOPHERS

Thomomys bottae – Botta's pocket gopher

MURIDAE – RATS AND MICE

Microtus californicus – California vole

Neotoma sp. – woodrat

* *Rattus rattus* – roof rat

* *Rattus norvegicus* – brown rat

CANIDAE – WOLVES AND FOXES

* *Canis lupus familiaris* – domestic dog

Canis latrans – coyote

PROCYONIDAE – RACCOONS AND RELATIVES

Procyon lotor – common raccoon

FELIDAE – CATS

* *Felis catus* – domestic cat

Lynx rufus – bobcat

CERVIDAE – DEERS

Odocoileus hemionus – mule deer

WILDLIFE SPECIES – INVERTEBRATES

BUTTERFLIES AND MOTHS

PAPILIONIDAE – SWALLOWTAILS

Papilio rutulus – tiger swallowtail

Papilio zelicaon – anise swallowtail

PIERIDAE – WHITES AND SULFURS

Pieris rapae – European cabbage butterfly



Pontia protodice – checkered white

LYCAENIDAE – BLUES, HAIRSTREAKS AND COPPERS

Brephidium exile – western pygmy blue

Plebejus acmon – acmon blue

NYMPHALIDAE – BRUSH-FOOTED BUTTERFLIES

Adelpha bredowii – California sister

Danaus gilippus – queen

Nymphalis antiopa – mourning cloak

Vanessa annabella – west coast lady

CRUSTACEANS

ASTACOIDEA – CRAYFISH

* *Procambarus clarkii* – red swamp crayfish

OTHER INVERTEBRATES

ORDER ANOSTRACA

Branchinecta lindahli – versatile fairy shrimp

Branchinecta sandiegonensis – San Diego fairy shrimp



Appendix C Special-Status Species Not Observed and With Low Potential or Not Expected to Occur On Site

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APPENDIX C SPECIAL-STATUS SPECIES NOT OBSERVED AND WITH LOW POTENTIAL OR NOT EXPECTED TO OCCUR ON SITE

Table C-1. Special-Status Plants Not Observed and with Low Potential or not Expected to Occur On Site

Scientific Name	Common Name	Federal/ State/Other Status	CRPR List	Primary Habitat Associations/Life Form/Blooming Period	Status On Site or Potential to Occur
<i>Acanthomintha ilicifolia</i>	San Diego thornmint	FT/SE/ MSCP NE	1B.1	Chaparral, coastal sage scrub, valley and foothill grassland, vernal pools, clays/annual herb/ April–June	Low potential. Limited suitable clay soils on site; vernal pools absent; focused survey negative.
<i>Adolphia californica</i>	California adolphia	None/ None/ None	2.1	Chaparral, coastal sage scrub, valley and foothill grassland, clays/ shrub/ December–April	Not expected. Shrub likely to have been detected during focused survey.
<i>Agave shawii</i>	Shaw's agave	None/ None/ MSCP	2.1	Coastal bluff scrub, coastal sage scrub/ shrub/ May–July	Not expected. Shrub likely to have been detected during focused survey.
<i>Ambrosia chenopodiifolia</i>	San Diego bur-sage	None/ None/ None	2.1	Coastal sage scrub/ shrub/ April–June	Not expected. Shrub likely to have been detected during focused survey.
<i>Ambrosia monogyra</i>	Single whorl burrobrush	None/ None/ None	2.2	Chaparral, Sonoran desert scrub; sandy/ shrub/ August–November	Not expected. Shrub likely to have been detected during focused survey.
<i>Ambrosia pumila</i>	San Diego ambrosia	FE/None/ MSCP NE	1B.1	Chaparral, coastal sage scrub, valley and foothill grassland, vernal pools, clays/ perennial herb/ June–September	Low potential. Limited suitable clay soils on site; vernal pools absent; focused survey negative.
<i>Aphanisma blitoides</i>	Aphanisma	None/ None/ MSCP	1B.2	Coastal bluff scrub, coastal sage scrub, sandy soils/ annual herb/ April–May	Low potential. Limited suitable soils on site; not observed during focused surveys.
<i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i>	Del Mar manzanita	FE/None/ MSCP	1B.1	Southern maritime chaparral, sandy mesas and bluffs/ shrub/ December–April	Not expected. Shrub likely to have been detected during focused survey.
<i>Arctostaphylos otayensis</i>	Otay manzanita	None/ None/ MSCP	1B.2	Chaparral, cismontane woodland; metavolcanic/ evergreen shrub/ January–March/ 900–5600 feet	Not expected. Outside of known geographic and elevation range.
<i>Astragalus deanei</i>	Dean's milk-vetch	None/ None/ None	1B.1	Chaparral, coastal sage scrub, riparian forest/ perennial herb/ March–May	Not expected. Outside of known geographic and elevation range.
<i>Astragalus tener</i> var. <i>titi</i>	Coastal dunes milk-vetch	FE/SE/ MSCP	1B.1	Coastal bluff scrub, coastal dunes/ annual herb/ March–May	Not expected. No suitable vegetation.



Table C-1. Special-Status Plants Not Observed and with Low Potential or not Expected to Occur On Site (continued)

Scientific Name	Common Name	Federal/ State/Other Status	CRPR List	Primary Habitat Associations/Life Form/Blooming Period	Status On Site or Potential to Occur
<i>Atriplex coulteri</i>	Coulter's saltbush	None/ None/ None	1B.2	Coastal bluff scrub, coastal dunes, coastal sage scrub, valley and foothill grassland, alkaline or clay soils/ perennial herb/ March-October	Low potential. Limited suitable soils on site; not observed during focused surveys.
<i>Atriplex pacifica</i>	South Coast saltscale	None/ None/ None	1B.2	Coastal bluff scrub, coastal sage scrub, playas/ annual herb/ March-October	Low potential. Distinctive plant, suitable habitat openings in scrub areas relatively disturbed; not observed during focused surveys.
<i>Atriplex serenana</i> var. <i>davidsonii</i>	Davidson's saltscale	None/ None/ None	1B.2	Coastal bluff scrub, coastal sage scrub, alkaline soils/ annual herb/ April-October	Low potential. Limited suitable soils on site; not observed during focused surveys.
<i>Berberis nevinii</i>	Nevin's barberry	FE/SE/ MSCP NE	1B.1	Chaparral, cismontane woodland, coastal scrub, riparian scrub; sandy or gravelly/ shrub/ March-April/ 900-2700 feet	Not expected. Outside of known elevation range.
<i>Bergerocactus emoryi</i>	Golden-spined cereus	None/ None/ None	2.2	Closed-cone conifer forest, chaparral, coastal sage scrub, sandy soils/ shrub/ May-June	Not expected. Shrub likely to have been detected during focused surveys.
<i>Baccharis vanessae</i>	Encinitas baccharis	FT/SE/ MSCP NE	1B.1	Chaparral, cismontane woodland; sandstone/ deciduous shrub/ August-November/ 200-2400 feet	Low potential. Limited suitable soils and habitat on site. Shrub likely to have been detected during focused surveys.
<i>Bloomeria clevelandii</i>	San Diego goldenstar	None/ None/ MSCP	1B.1	Chaparral, coastal sage scrub, valley and foothill grassland, vernal pools/perennial herb/ May	Not expected. Likely to have been detected during surveys.
<i>Brodiaea filifolia</i>	Thread-leaved brodiaea	FT/SE/ MSCP NE	1B.1	Chaparral (openings) cismontane woodland, coastal scrub, playas, valley and foothill grassland, vernal pools; often clay /bulbiferous herb/ March-June/ 400-2800 feet.	Low potential. Focused surveys targeted suitable habitat during peak blooming period. If present, species is readily detectable in years of at least average rainfall, but survey results negative.



Table C-1. Special-Status Plants Not Observed and with Low Potential or not Expected to Occur On Site (continued)

Scientific Name	Common Name	Federal/ State/Other Status	CRPR List	Primary Habitat Associations/Life Form/Blooming Period	Status On Site or Potential to Occur
<i>Calochortus dunnii</i>	Dunn's mariposa lily	None/SR/MSC P NE	1B.2	Closed-cone conifer forest, chaparral; gabbroic or metavolcanic/bulbiferous herb/ April–June/ 1250–6000 feet	Not expected. Outside of known elevation range.
<i>Camissonia lewisii</i>	Lewis's evening primrose	None/ None/ None	3	Coastal bluff scrub, cismontane woodland, coastal dunes, coastal sage scrub, valley and foothill grassland, sandy or clay soils/ annual herb/ March–June	Low potential. Limited suitable soils and habitat on site. Not observed during focused surveys.
<i>Caulanthus stenocarpus</i>	Slender-pod jewelflower	None/ None/ MSCP	None	Chaparral, coastal sage scrub/ annual herb, fire follower/ annual herb/ April–May	Low potential, but not observed during focused surveys.
<i>Ceanothus cyaneus</i>	Lakeside ceanothus	None/ None/ MSCP NE	1B.2	Closed-cone conifer forest, chaparral/ evergreen shrub/ April–June/ 770–2,500 feet	Not expected; outside of known elevation range. Shrub would have been observed during surveys.
<i>Ceanothus verrucosus</i>	Wart-stemmed ceanothus	None/ None/ MSCP	2.2	Chaparral/ shrub/ January–April	Not expected. Limited suitable habitat on site. Shrub would have been observed during surveys.
<i>Centromadia parryi</i> spp. <i>australis</i>	Southern tarplant	None/ None/ None	1B.1	Marshes and swamps (margins), valley and foothill grassland (vernally mesic), vernal pools/ annual herb/May–November/ < 400 feet	Low potential. Limited suitable habitat on site. Not observed during focused surveys.
<i>Chaenactis glabriuscula</i> var. <i>orcuttiana</i>	Orcutt's pincushion	None/ None/ None	1B.1	Coastal bluff and dune scrub/ annual herb/ January–August	Not expected. No suitable vegetation.
<i>Chloropyron maritimum</i> ssp. <i>maritimum</i>	Salt marsh bird's-beak	FE/SE/ MSCP	1B.2	Coastal dunes, coastal saltwater marshes and swamps/ annual herb/ May–October	Not expected. No suitable vegetation.
<i>Chorizanthe orcuttiana</i>	Orcutt's spineflower	FE/SE/ None	1B.1	Chaparral, closed-cone conifer forest, coastal sage scrub/ annual herb/ March–April	Low potential, species only recorded from 11 occurrences in County, suitable sandy sites and openings in study area associated with disturbance. Not observed during focused surveys.

Table C-1. Special-Status Plants Not Observed and with Low Potential or not Expected to Occur On Site (continued)

Scientific Name	Common Name	Federal/ State/Other Status	CRPR List	Primary Habitat Associations/Life Form/Blooming Period	Status On Site or Potential to Occur
<i>Chorizanthe polygonoides</i> var. <i>longispina</i>	Long-spined spineflower	None/ None/ None	1B.2	Chaparral, coastal sage scrub, meadows and seeps, valley and foothill grassland, often clay/ annual herb/April-July	Low potential. Limited suitable clay soil on site; not detected during focused surveys.
<i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i>	Summer-holly	None/ None/ None	1B.2	Chaparral shrub/ April-June	Not expected. Limited suitable habitat on site. Shrub would have been observed during surveys.
<i>Corethrogyne filaginifolia</i> var. <i>incana</i>	San Diego sand aster	None/ None/ None	1B.1	Coastal sage scrub/perennial herb/ June-August	Not expected. Perennial herb would have been observed during surveys.
<i>Corethrogyne filaginifolia</i> var. <i>linifolia</i>	Del Mar Mesa sand aster	None/ None/ MSCP	1B.1	Chaparral, coastal sage scrub/ perennial herb/ July-September	Not expected. Perennial herb would have been observed during surveys.
<i>Deinandra conjugens</i>	Otay tarplant	FT/SE/ MSCP NE	1B.1	Coastal sage scrub, valley and foothill grassland, clays/ annual herb/ May-June	Low potential. Limited suitable clay soil on site; not detected during focused surveys.
<i>Dicranostegia orcuttiana</i>	Orcutt's bird's-beak	None/ None/ MSCP	2.1	Coastal sage scrub/annual herb/ March-July	Low potential. Would have been observed during surveys.
<i>Dudleya attenuata</i> ssp. <i>orcuttii</i>	Orcutt's dudleya	None/ None/ None	2.1	Coastal bluff scrub, chaparral, coastal sage scrub/perennial herb/ May-July	Low potential. Outside of current known range (only known from Border Field State Park).
<i>Dudleya blochmaniae</i> spp. <i>blochmaniae</i>	Blochman's dudleya	FSC/ None/ MSCP NE	1B.1	Coastal bluff scrub, coastal sage scrub, valley and foothill grassland, rocky, often clay or serpentinite soil/ perennial herb/April-June	Low potential. No suitable rocky soils.
<i>Dudleya brevifolia</i>	Short-leaved dudleya	None/SE/ MSCP	1B.1	Chaparral, coastal sage scrub; Torrey sandstone/ perennial herb/ April	Not expected. No suitable Torrey sandstone soils.
<i>Dudleya variegata</i>	Variegated dudleya	None/ None/ MSCP NE	1B.2	Chaparral, cismontane woodland, coastal sage scrub, valley and foothill grassland, vernal pools/perennial herb/ May-June	Low potential. Limited clay soil on site, few historical records of species in coastal areas. Not observed during focused surveys.
<i>Dudleya viscida</i>	Sticky dudleya	None/ None/ MSCP	1B.2	Coastal bluff scrub, chaparral, coastal sage scrub, rocky areas/ perennial herb/May-June	Low potential. No suitable rocky areas.



Table C-1. Special-Status Plants Not Observed and with Low Potential or not Expected to Occur On Site (continued)

Scientific Name	Common Name	Federal/ State/Other Status	CRPR List	Primary Habitat Associations/Life Form/Blooming Period	Status On Site or Potential to Occur
<i>Ericameria palmeri</i> ssp. <i>palmeri</i>	Palmer's goldenbush	None/ None/ MSCP NE	2.2	Coastal sage scrub/ shrub/ September–November	Not expected. Shrub likely to have been detected during surveys.
<i>Eryngium aristulatum</i> var. <i>parishii</i>	San Diego button-celery	FE/SE/ MSCP NE	1B.1	Coastal sage scrub, valley and foothill grassland, vernal pools, mesic areas/ annual-perennial herb/April–June	Not expected. Suitable (vernal pool) microhabitat lacking.
<i>Erysimum ammodophilum</i>	Coast wallflower	None/ None/ MSCP	1B.2	Coastal dunes perennial herb/ February–June	Not expected. No suitable coastal dune vegetation.
<i>Euphorbia misera</i>	Cliff spurge	None/ None/ None	2.2	Coastal bluff scrub, coastal sage scrub, rocky areas/ shrub/ January–August	Not expected. No suitable rocky areas. Shrub likely to have been detected during focused surveys.
<i>Ferocactus viridescens</i>	San Diego barrel cactus	None/ None/ MSCP	2.1	Chaparral, coastal sage scrub, valley and foothill grassland, vernal pools/ shrub/ May–June	Not expected. Conspicuous cactus species likely to have been detected during surveys.
<i>Frankenia palmeri</i>	Palmer's frankenia	None/ None/ None	2.1	Coastal dunes, saltwater marsh and swamps, playas/ perennial herb/May–July	Not expected. No suitable vegetation.
<i>Fremontodendron mexicanum</i>	Mexican flannelbush	FE/SR/ None	1B.1	Closed-cone conifer forest, chaparral, cismontane woodland, gabbroic or serpentinite soils/ shrub/ March–June	Not expected. Shrub would have been observed during surveys.
<i>Geothallus tuberosus</i>	Campbell's liverwort	None/ None/ None	1B.1	Coastal scrub (mesic), vernal pools; soil/ ephemeral liverwort/ N/A	Low potential. No suitable (mesic) microhabitat.
<i>Githopsis diffusa</i> ssp. <i>filicaulis</i>	Mission Canyon bluecup	None/ None/ None	3.1	Chaparral (mesic, disturbed areas)/ annual herb/May/ 1,476–2,297 feet	Not expected. Outside of known elevation and geographical range.
<i>Hesperocyparis forbesii</i>	Tecate cypress	None/ None/ MSCP	1B.1	Closed-cone conifer forest, chaparral/ evergreen tree/ NA/ 800–5900 feet	Not expected. Outside of known elevation range.
<i>Heterotheca sessiliflora</i> ssp. <i>sessiliflora</i>	Beach goldenaster	None/ None/ None	1B.1	Coastal dunes, coastal scrub, (coastal) chaparral/ annual herb	Low potential. Limited suitable habitat on site. Not observed during focused surveys.
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	None/ None/ None	1B.1	Saltwater marsh and swamps, playas, vernal pools/ annual herb/ February–June	Not expected. No suitable vegetation or microhabitat (vernal pools).



Table C-1. Special-Status Plants Not Observed and with Low Potential or not Expected to Occur On Site (continued)

Scientific Name	Common Name	Federal/ State/Other Status	CRPR List	Primary Habitat Associations/Life Form/Blooming Period	Status On Site or Potential to Occur
<i>Lepechinia ganderi</i>	Gander's pitcher sage	None/ None/ MSCP NE	1B.3	Closed-cone conifer forest, chaparral, coastal scrub, valley and foothill grassland; gabbroic or metvolcanic/ shrub/ June–July/ 1,000–3,300 feet	Not expected. Outside of known elevation range.
<i>Leptosyne maritima</i>	Sea dahlia	None/ None/ None	2.2	Coastal bluff scrub, coastal sage scrub/perennial herb/ March–May	Low potential. Would have been observed during surveys.
<i>Lotus nuttallianus</i>	Nuttall's lotus	None/ None/ MSCP	1B.1	Coastal dunes, coastal sage scrub/ annual herb/ March–June	Low potential. Limited suitable habitat on site. Not observed during focused surveys.
<i>Mobergia calculiformis</i>	Light gray lichen	None/ None/ None	—	Coastal scrub?; abundant on cobbles/ lichen/ N/A	Low potential to occur due to lack of suitable microhabitat.
<i>Monardella hypoleuca</i> ssp. <i>lanata</i>	Felt-leaved monardella	None/ None/ MSCP NE	1B.2	Chaparral, cismontane woodland/ rhizomatous herb/ June–August/ 1,000–3,600 feet	Not expected. Outside of known elevation range.
<i>Monardella viminea</i>	Willowy monardella	FE/SE/ MSCP	1B.1	Closed-cone conifer forest, chaparral, riparian forest, woodland, and scrub/ perennial herb/ June–August	Not expected. Preferred microhabitat of rocky washes (Jepson Flora Project 2012) marginal on site; focused surveys negative.
<i>Navarretia prostrata</i>	Prostrate navarretia	None/ None/ None	1B.1	Coastal scrub, meadows and seeps, valley and foothill grassland, vernal pools/ annual herb/ April–July	Low potential, suitable alkaline or vernal pool micro habitat not present. Not observed during focused surveys.
<i>Myosurus minimus</i> ssp. <i>apus</i>	Little mousetail	None/ None/ None	3.1	Vernal pools (alkaline)/ annual herb/ March–June	Not expected. No suitable vernal pool microhabitat.
<i>Nama stenocarpum</i>	Mud nama	None/ None/ None	2.2	Marsh and swamps, lake margins and riverbanks/ annual-perennial herb/ January–July	Not expected. No suitable habitat.
<i>Navarretia fossalis</i>	Spreading navarretia	FT/None/ MSCP	1B.1	Chenopod scrub, shallow freshwater marsh and swamps, vernal pools/ annual herb/ April–June	Low potential. Limited suitable freshwater marsh vegetation.
<i>Nemacaulis denudata</i> var. <i>denudata</i>	Coast woolly-heads	None/ None/ None	1B.2	Coastal dunes/ annual herb/ April–September	Not expected. No suitable coastal dune habitat.
<i>Nemacaulis denudata</i> var. <i>gracilis</i>	Slender woolly-heads	None/ None/ None	2.2	Coastal dunes, desert dunes, Sonoran Desert scrub/ annual herb/ March–May	Not expected. No suitable habitat.



Table C-1. Special-Status Plants Not Observed and with Low Potential or not Expected to Occur On Site (continued)

Scientific Name	Common Name	Federal/ State/Other Status	CRPR List	Primary Habitat Associations/Life Form/Blooming Period	Status On Site or Potential to Occur
<i>Nolina interrata</i>	Dehesa nolina	None/SE/ MSCP	1B.1	Chaparral; gabbroic, metavolcanic or serpentinite/ perennial herb/ June–July/ 600–2800 feet	Not expected. Outside of known elevation range.
<i>Opuntia californica</i> var. <i>californica</i> [Snake cholla	None/ None/ MSCP NE	1B.1	Chaparral, coastal sage scrub/ shrub/ April–May	Not expected. Shrub would have been observed during surveys.
<i>Orcuttia californica</i>	California Orcutt grass	FE/SE/ MSCP NE	1B.1	Vernal pools/ annual herb/ April–June	Not expected. No suitable vernal pool habitat.
<i>Ornithostaphylos oppositifolia</i>	Baja California birdbrush	None/SE/ None	2.1	Chaparral/ shrub/ January–April	Not expected. Shrub would have been observed during surveys.
<i>Packera ganderi</i>	Gander's ragwort	None/SR/ MSCP	1B.2	Chaparral (burns and gabbroic outcrops)/ perennial herb/ April–June/ 1300–4000 feet	Not expected. Outside of known elevation range.
<i>Phacelia stellaris</i>	Brand's phacelia	None/ None/ None	1B.1	Coastal dunes, coastal sage scrub/annual herb/ March–June	Low potential. Limited suitable habitat on site. Not observed during focused surveys.
<i>Pinus torreyana</i> spp. <i>torreyana</i>	Torrey pine	None/ None/ MSCP	1B.2	Closed-cone conifer forest, chaparral, sandstone/ tree/ NA	Not expected. Tree would have been observed during surveys.
<i>Pogogyne abramsii</i>	San Diego mesa mint	FE/SE/ MSCP NE	1B.1	Vernal pools/ annual herb/ April–June	Not expected. No suitable vernal pool habitat.
<i>Pogogyne nudiusscula</i>	Otay Mesa mint	FE/SE/ MSCP NE	1B.1	Vernal pools/ annual herb/ May–June	Not expected. No suitable vernal pool habitat.
<i>Quercus dumosa</i>	Nuttall's scrub oak	None/ None/ None	1B.1	Chaparral, coastal sage scrub, sandy and clay loam soils/ shrub/ February–March	Not expected. Shrub likely to have been detected during surveys.
<i>Ribes viburnifolium</i>	Santa Catalina Island currant	None/ None/ None	1B.2	Chaparral, cismontane woodland/evergreen shrub/ February–April	Not expected. Shrub likely to have been detected during surveys.
<i>Rosa minutifolia</i>	Small-leaved rose	None/SE/ MSCP	2.1	Chaparral/shrub/ January–June	Not expected. Shrub likely to have been detected during focused surveys.
<i>Satureja chandleri</i>	San Miguel savory	None/ None/ MSCP	1B.2	Chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland; rocky, gabbroic or metavolcanic/ shrub/ March–July/ 400-3,550 feet	Not expected. Shrub likely to have been detected during focused surveys.
<i>Senecio aphanactis</i>	Rayless ragwort	None/ None/ None	2.2	Cismontane woodland, coastal sage scrub, alkaline soils/ annual herb/ January–April	Low potential. Alkaline soils limited on site.



Table C-1. Special-Status Plants Not Observed and with Low Potential or not Expected to Occur On Site (continued)

Scientific Name	Common Name	Federal/ State/Other Status	CRPR List	Primary Habitat Associations/Life Form/Blooming Period	Status On Site or Potential to Occur
<i>Solanum tenuilobatum</i>	Narrow-leaved nightshade	None/ None/ MSCP	None	Chaparral; dry open places/ herb or shrub/ March–April/ 3,300–9,000 feet	Not expected. Outside of known elevation range.
<i>Stemodia durantifolia</i>	Purple stemodia	None/ None/ None	2.1	Sonoran desert scrub (often mesic, sandy)/ perennial herb/ January–December	Not expected. No suitable Sonoran desert scrub.
<i>Stylocline citroleum</i>	Oil neststraw	None/ None/ None	1B.1	Chenopod scrub, coastal scrub, valley and foothill grassland; clay/ annual herb/ March–April	Not expected. Thought to be extirpated in San Diego County.
<i>Suaeda esteroa</i>	Estuary seablite	None/ None/ None	1B.2	Saltmarsh/ perennial herb/ July–October	Not expected. No suitable saltmarsh habitat.
<i>Tetracoccus dioicus</i>	Parry's tetracoccus	None/ None/ MSCP	1B.2	Chaparral, coastal sage scrub/ shrub/ April–May	Not expected. Shrub likely to have been detected during surveys.

Status Designations:

FE: Federally listed as endangered
FT: Federally listed as threatened
SE: State-listed as endangered
SR: State rare
MSCP: Covered Species
MSCP NE: Narrow endemic species

CNPS CRPR:

1A: Plants Presumed Extinct in California
1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
2: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
3: Plants About Which We Need More Information—A Review List
4: Plants of Limited Distribution—A Watch List

Threat Ranks:

0.1: Seriously threatened in California (high degree/immediacy of threat)
0.2: Fairly threatened in California (moderate degree/immediacy of threat)
0.3: Not very threatened in California (low degree/immediacy of threats or no current threats known)



**Table C-2. Special-Status Wildlife Species
Not Expected to Occur or Rarely Occurring in the Study Area**

Scientific Name	Common Name	Status Federal/ State/Other	Primary Habitat Associations	Status in or Potential to Occur in the Study Area
Amphibians				
<i>Anaxyrus californicus</i>	Arroyo toad	FE/CSC/ MSCP	Stream channels for breeding (typically 3rd order); adjacent stream terraces and uplands for foraging and wintering	Not expected to occur. Although stream channels occur in the study area, the closest recorded location is approximately 14 miles to the southeast (CDFG, 2012a). Species is no longer known to occur within city limits.
<i>Ensatina klauberi</i>	Large-blotched salamander	None/ CSC/ None	Oak woodland, chaparral, coastal sage scrub, coastal dunes, conifer forest	No potential. This species is found in the Peninsular Ranges of Southern California (Nafis, 2010) and does not occur in the study area.
<i>Rana draytoni</i>	California red-legged frog	FT/CSC/ MSCP	Lowland streams, wetlands, riparian woodlands, livestock ponds; dense, shrubby, or emergent vegetation associated with deep, still, or slow-moving water; uses adjacent uplands	Not expected to occur. Suitable habitat exists in the study area within wetland areas; however, the closest recorded location for this species is approximately 48 miles to the northeast in Riverside County (CDFG, 2012a).
Reptiles				
<i>Emys marmorata</i>	Western pond turtle	None/ CSC/ MSCP	Slow-moving permanent or intermittent streams, ponds, small lakes, reservoirs with emergent basking sites; adjacent uplands used during winter	Low potential to occur. Some suitable perennial water in the San Diego River; however, this species has not been documented in the vicinity. The non-native red-slider was observed, but western pond turtles were not. There is one record in the Escondido quadrangle approximately 13 miles northeast (date unknown) (CDFG, 2012a).
<i>Salvadora hexalepis virgulata</i>	Coast patch-nosed snake	None/ CSC/ None	Chaparral, washes, sandy flats, rocky areas	Low potential to occur. Some patches of suitable habitat occur in the study area, but species is uncommon.
<i>Thamnophis sirtalis</i> ssp.	South coast garter snake	None/ CSC/ None	Marshes, meadows, sloughs, ponds, slow-moving water courses	Low potential. Suitable habitat along San Diego River limited due to extent of disturbance; this species has not been documented within the CNDDDB nine quad search (CDFG, 2012a).



**Table C-2. Special-Status Wildlife Species
Not Expected to Occur or Rarely Occurring in the Study Area (continued)**

Scientific Name	Common Name	Status Federal/ State/Other	Primary Habitat Associations	Status in or Potential to Occur in the Study Area
Birds				
<i>Agelaius tricolor</i> (nesting colony)	Tricolored blackbird	BCC/ CSC/ ABC/ MSCP	Nests near fresh water, emergent wetland with cattails or tules; forages in grasslands, woodland, agriculture	Low potential to occur. Not observed during surveys; some suitable habitat in San Diego River, but habitat in study is too small and patchy and adjacent to human activities. Although not recorded in the vicinity, this species is known to breed in San Diego County and migrants or dispersers may occur near the study area in the San Diego River (Unitt, 2004).
<i>Aquila chrysaetos</i> (nesting and wintering)	Golden eagle	BCC/ WL, P/ MSCP	Open country, especially hilly and mountainous regions; grassland, coastal sage scrub, chaparral, oak savannas, open coniferous forest	Not expected to occur or very rarely (e.g., by a juvenile). The study area is too urbanized and not suitable for nesting; not recorded in nine quad search (CDFG, 2012a).
<i>Asio flammeus</i> (nesting)	Short-eared owl	None/ CSC/ ABC	Grassland, prairies, dunes, meadows, irrigated lands, saline and freshwater emergent wetlands	Low potential to occur due to poor habitat quality and urbanized environment. Not recorded in nine quad search (CDFG, 2012a).
<i>Asio otus</i> (nesting)	Long-eared owl	None/ CSC/ None	Riparian, live oak thickets, other dense stands of trees, edges of coniferous forest	Low potential to occur due to lack of suitable habitat and urbanized environment. Not recorded in nine quad search (CDFG, 2012a).
<i>Athene cunicularia</i> (burrow sites)	Burrowing owl	BCC/ CSC/ MSCP	Grassland, lowland scrub, agriculture, coastal dunes and other artificial open areas	Low potential to occur. Some suitable habitat in the study area. This species was recorded on Fiesta Island in Mission Bay (date unknown); however, this location is probably extirpated (CDFG, 2012a).
<i>Buteo regalis</i> (wintering)	Ferruginous hawk	BCC/ WL/ None	Open, dry country, grasslands, open fields, agriculture	Low potential to occur. Does not nest in Southern California and study area too urbanized for this species. Not recorded in nine quad search (CDFG, 2012a).
<i>Buteo swainsoni</i> (nesting)	Swainson's hawk	BCC/ST/ ABC, MSCP	Open grassland, shrublands, croplands	Low potential to occur. Study area too urbanized for this species. Not recorded in nine quad search (CDFG, 2012a). Species may migrate through area on occasion but nesting in California is limited to Central Valley and Antelope Valley.



**Table C-2. Special-Status Wildlife Species
Not Expected to Occur or Rarely Occurring in the Study Area (continued)**

Scientific Name	Common Name	Status Federal/State/Other	Primary Habitat Associations	Status in or Potential to Occur in the Study Area
<i>Campylorhynchus brunneicapillus sandiegensis</i>	San Diego cactus wren	BCC/ CSC/ MSCP	Southern cactus scrub, maritime succulent scrub, cactus thickets in coastal sage scrub	Not expected to occur. Not detected within scrub areas during coastal California gnatcatcher surveys. No suitable patches of cactus were observed in the study area.
<i>Charadrius montanus</i> (wintering)	Mountain plover	PT, BCC/ CSC, ABC, MSCP	Nests in open, shortgrass prairies or grasslands; winters in shortgrass plains, plowed fields, open sagebrush, and sandy deserts	Low potential to occur due to lack of suitable habitat. Not recorded in nine quad search (CDFG, 2012a).
<i>Chlidonias niger</i> (nesting colony)	Black tern	None/ CSC/ None	Freshwater lakes, marshes, ponds, coastal lagoons	Low potential to occur. No suitable nesting areas and study area unlikely to support fish species for foraging.
<i>Coccyzus americanus occidentalis</i> (nesting)	Western yellow-billed cuckoo	FC, BCC/SE/ None	Dense, wide riparian woodlands and forest with well-developed understories	No expected to occur due to lack of suitable large stands of riparian vegetation. Not recorded in the vicinity (CDFG, 2012a).
<i>Falco mexicanus</i> (nesting)	Prairie falcon	BCC/ WL/ None	Grassland, savannas, rangeland, agriculture, desert scrub, alpine meadows; nest on cliffs or bluffs	Low potential to occur in study area based on lack of open foraging habitat and suitable nesting habitat. Not recorded in nine quad search (CDFG, 2012a).
<i>Haliaeetus leucocephalus</i> (nesting and wintering)	Bald eagle	(FD), BCC/ SE, P/ MSCP	Seacoasts, rivers, swamps, large lakes; winters at large bodies of water in lowlands and mountains	Not expected to occur due to lack of suitable roosting trees near open bodies of water in the study area. Not recorded in nine quad search (CDFG, 2012a).
<i>Ixobrychus exilis</i> (nesting)	Least bittern	BCC/ CSC/ None	Dense emergent wetland vegetation, sometimes interspersed with woody vegetation and open water	Low potential to occur. Some potential marsh habitat near Mission Bay and San Diego River, but not recorded in the vicinity.
<i>Laterallus jamaicensis coturniculus</i>	California black rail	BCC/ ST, P/ ABC	Saline, brackish, and fresh emergent wetlands	Very low potential to occur in the marsh habitat near Mission Bay and San Diego River. Observed approximately one mile north of the study area in 1952 (CDFG, 2012a), but the last observed individual in the county was in 1983. It is assumed to be extirpated in San Diego County (Unitt, 2004).
<i>Pandion haliaetus</i> (nesting)	Osprey	None/ WL/ None	Large waters (lakes, reservoirs, rivers) supporting fish; usually near forest habitats, but widely	Not recorded in the vicinity. Not expected to nest in the study area due to lack of roosting trees and highly urbanized environment.



**Table C-2. Special-Status Wildlife Species
Not Expected to Occur or Rarely Occurring in the Study Area (continued)**

Scientific Name	Common Name	Status Federal/ State/Other	Primary Habitat Associations	Status in or Potential to Occur in the Study Area
			observed along the coast	However it may forage occasionally along the more open waterways.
<i>Passerculus sandwichensis beldingi</i>	Belding's Savannah sparrow	None/ SE/ MSCP	Saltmarsh, pickleweed	Low potential to occur. Surveys in 2009 were negative and the saltmarsh habitat (0.5 acre) assessed was not large enough to support this species.
<i>Passerculus sandwichensis rostratus</i> (wintering)	Large-billed Savannah sparrow	None/ CSC/ MSCP	Saltmarsh, pickleweed	Low potential to occur. Some suitable habitat near Mission Bay or San Diego River; however, it has not been recorded in the nine quad search (CDFG, 2012a).
<i>Pelecanus erythrorhynchos</i> (nesting colony)	American white pelican	None/ CSC/ None	Open water, coastal bays, large inland lakes	Not expected to occur in the study area due to lack of open water foraging or resting habitat.
<i>Pelecanus occidentalis californicus</i> (nesting colony and communal roosts)	California brown pelican	(FD)/ (SD), P/ MSCP	Open sea, large water bodies, coastal bays and harbors	Not expected to occur in the study area due to lack of open water foraging or resting habitat.
<i>Piranga rubra</i> (nesting)	Summer tanager	None/ CSC/ None	Nests in riparian woodland; winter habitats include parks and residential areas	Not expected to occur. Does not nest along coastal southern California.
<i>Sternula antillarum browni</i> (nesting colony)	California least tern	FE/ SE, P/ ABC, MSCP	Coastal waters, estuaries, large bays and harbors, mudflats; nests on sandy beaches	Low potential to occur in the study area, but recorded in the general vicinity (CDFG, 2012a). Has a moderate potential to breed at Mission Bay or San Diego Bay and may forage in shallow waters of Rose Creek, San Clemente Creek, Tecolote Creek, and San Diego River.



**Table C-2. Special-Status Wildlife Species
Not Expected to Occur or Rarely Occurring in the Study Area (continued)**

Scientific Name	Common Name	Status Federal/State/Other	Primary Habitat Associations	Status in or Potential to Occur in the Study Area
<i>Thalasseus elegans</i> (nesting colony)	Elegant tern	None/ WL/ ABC, MSCP	Coastal waters, estuaries, large bays and harbors, mudflats	Low potential to forage in shallow waters of Rose Creek, San Clemente Creek, Tecolote Creek, and San Diego River. It has not been recorded in the vicinity (CDFG, 2012a).
Mammals				
<i>Antrozous pallidus</i>	Pallid bat	None/ CSC/ WBWG	Rocky outcrops, cliffs, and crevices with access to open habitats for foraging	Not expected to occur due to lack of roosting habitat nearby.
<i>Choeronycteris mexicana</i>	Mexican long-tongued bat	None/ CSC/ WBWG	Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon-juniper woodland. Roosts in caves, mines, and buildings	Low potential to occur. Outside of suitable desert habitat for this species; however, it has been recorded in the vicinity.
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None/ CSC/ WBWG	Mesic habitats, gleans from brush or trees or feeds along habitat edges	Low potential to occur. Some foraging habitat within the study area; but this species was not recorded in the nine quad search (CDFG, 2012a).
<i>Onychomys torridus ramona</i>	Southern grasshopper mouse	None/ CSC/ None	Grassland, sparse coastal sage scrub	Low potential to occur in the study area. There is some suitable habitat in the study area, but this species is uncommon. The study area is highly urbanized and this species was not recorded in the nine quad search (CDFG, 2012a).
<i>Perognathus longimembris pacificus</i>	Pacific pocket mouse	FE/CSC/ MSCP	Grassland, coastal sage scrub with sandy soils; along immediate coast	Very low potential to occur within the study area. Recorded historically in the vicinity, however, assumed to be extirpated in southern San Diego County. Currently only known to occur in northern San Diego County and southern Orange County coastal areas.
<i>Puma concolor</i>	Mountain lion	None/ None/ MSCP	Coastal sage scrub, chaparral, riparian, woodlands, forest; rests in rocky areas, and on cliffs and ledges that provide cover	Not expected to occur or extremely rare due to urbanized setting.
<i>Taxidea taxus</i>	American badger	None/ CSC/ MSCP	Dry, open treeless areas, grasslands, coastal sage scrub	Low potential to occur due to urbanization and habitat fragmentation. Some suitable habitat in Rose Canyon and along Rose Creek north of Santa Fe



**Table C-2. Special-Status Wildlife Species
Not Expected to Occur or Rarely Occurring in the Study Area (continued)**

Scientific Name	Common Name	Status Federal/ State/Other	Primary Habitat Associations	Status in or Potential to Occur in the Study Area
				Street. Recorded in the vicinity (CDFG, 2012a).
Invertebrates				
<i>Branchinecta lynchi</i>	Vernal pool fairy shrimp	FT/ None/ None	Vernal pools; cool-water pools with low to moderate dissolved solids	Not expected to occur. Focused surveys in 2010-2011, 2011-2012, and 2013-2014 were negative. While suitable depressions were observed along the existing tracks in Rose Canyon, with evidence of clay soils and seasonal inundation, this species has not been recorded in the area.
<i>Euphydryas editha quino</i>	Quino checkerspot butterfly	FE/ None/ None	Sparsely vegetated hilltops, ridgelines, occasionally rocky outcrops; host plant <i>Plantago erecta</i> and nectar plants must be present	Not expected to occur, although it was likely historically present. The species is considered extirpated from this portion of its range by urban development.
<i>Streptocephalus woottoni</i>	Riverside fairy shrimp	FE/ None/ MSCP	Deep, long-lived vernal pools, vernal pool-like seasonal ponds, stock ponds; warm water pools that have low to moderate dissolved solids	Not expected to occur. Focused surveys in 2010-2011, 2011-2012, and 2013-2014 were negative. While suitable depressions were observed along the existing tracks in Rose Canyon, with evidence of clay soils and seasonal inundation, this species has not been recorded in the area.

Sources: CDFG, 2012a; City of San Diego, 2004; Unitt, 2004; Nafis, 2010.

Status Designations:

Federal Designations:

- BCC Fish and Wildlife Service: Birds of Conservation Concern
- FC Federal candidate for listing
- (FD) Federally delisted; monitored for 5 years
- PT Proposed for federal listing as threatened
- FE Federally listed endangered
- FT Federally listed as threatened

State Designations:

- CSC California Special Concern Species
- P CDFW Protected and Fully Protected Species
- SE State-listed as endangered
- ST State-listed as threatened
- WL CDFW Watch List

Other Designations:

- MSCP MSCP Covered Species
- WBWG Western Bat Working Group High-Priority species
- ABC American Bird Conservancy: United States Watch List of Birds of Conservation Concern (The United States *WatchList* is a joint project between the American Bird Conservancy and the National Audubon Society)

CNDDDB = California Natural Diversity Database; CDFW = California Department of Fish and Wildlife



Appendix D

Focused Survey Reports

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2010 California Gnatcatcher Focused Survey Results for the Mid-Coast Corridor Transit Project, City of San Diego, California



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September 22, 2010

6099-02

U.S. Fish and Wildlife Service
Attn: Recovery Permit Coordinator
6010 Hidden Valley Road
Carlsbad, California 92011

Subject: 2010 California Gnatcatcher Focused Survey Results for the Mid-Coast Corridor Transit Project, City of San Diego, California.

Dear Recovery Permit Coordinator:

This report documents the results of three protocol-level presence/absence surveys for the coastal California gnatcatcher (*Poliophtila californica californica*; gnatcatcher) that were conducted within approximately 116-acre of suitable gnatcatcher habitat within the proposed project study area. Surveys were conducted in Spring of 2010. The surveys were conducted in all areas of suitable habitat, including coastal sage scrub, disturbed coastal sage scrub, and southern mixed chaparral adjacent to coastal sage scrub habitat.

The coastal California gnatcatcher is a federally listed threatened species and a California Department of Fish and Game species of Special Concern. It is closely associated with coastal sage scrub habitat and typically occurs below elevations of 950 feet above mean sea level (amsl) and on slopes less than 40%, but gnatcatchers have been observed at elevations greater than 2,000 feet amsl. The species is threatened primarily by loss, degradation, and fragmentation of coastal sage scrub habitat and is also thought to be impacted by brown-headed cowbird (*Molothrus ater*) nest parasitism.

LOCATION AND EXISTING CONDITIONS

The Mid-Coast Corridor Transit Project study area extends from Old Town Transit Center (OTTC) north to the University City in the western portion of the City of San Diego, San Diego County, California. The following communities are included in this area: University City, La Jolla, Clairemont Mesa, Pacific Beach, Mission Beach, Linda Vista, and Old Town. The project study area is bounded by the Pacific Ocean to the west, the I-5 and I-805 junction to the north, I-805 and SR-163 to the east, and OTTC and Mission Valley to the south (Figure 1). The proposed light rail transit (LRT) alternative alignments within the project study area generally run along I-5 from just south of I-8 at OTTC north to Genesee Avenue in University City, situated on the

U.S. Geological Survey 7.5 minute Del Mar and La Jolla quadrangles, Township 15 South, Range 3 West, in Section 17 (Figure 2).

VEGETATION COMMUNITIES

Vegetation communities on site that are suitable for coastal California gnatcatcher include Diegan coastal sage scrub and disturbed Diegan coastal sage scrub.

According to Holland (1986), Diegan coastal sage scrub (coastal sage scrub) vegetation is composed of a variety of soft, low shrubs, characteristically dominated by drought-deciduous species such as California sagebrush (*Artemisia californica*), flat-top buckwheat (*Eriogonum fasciculatum*), and sages (*Salvia* spp.), with scattered evergreen shrubs, including lemonadeberry (*Rhus integrifolia*) and laurel sumac (*Malosma laurina*). It typically develops on xeric slopes.

Disturbed coastal sage scrub is characterized by a lower percent cover of native species such as California sagebrush and flat-top buckwheat, and a higher percent cover of non-native forbs and grasses.

Coastal sage scrub subassociations include California sagebrush co-dominance with other seral sage scrub community species such as coyote bush scrub (*Baccharis pilularis*), broom baccharis (*Baccharis sarothroides*), or black sage (*Salvia mellifera*). These subassociations are considered suitable for gnatcatcher. The coastal sage scrub on site is dominated by California sagebrush, coyote brush (*Baccharis pilularis*), coastal goldenbush (*Isocoma menziesii*), and flat-top buckwheat with scattered black sage (*Salvia mellifera*).

METHODS

Suitable habitat within the project study area was surveyed three times by Dudek wildlife biologists Kamarul J. Muri (Permit # TE051250-3) and Paul M. Lemons (Permit # TE051248-4) according to the schedule provided in Table 1 (Figure 3). The surveys were conducted in conformance with the currently accepted protocol of the USFWS (1997). A map of the survey areas is provided in Figure 3.

A tape of recorded California gnatcatcher vocalizations played approximately every 50–100 feet was used to induce responses from potentially present California gnatcatchers. If a California gnatcatcher was detected, tape-playback would be terminated to minimize potential for harassment. A 200-scale (1 inch = 200 feet) aerial map of the site was used to conduct focused California gnatcatcher surveys. Binoculars (8×42 and 10×50) were used to aid in detecting and identifying bird species. Weather conditions, time of day, and season were appropriate for the detection of California gnatcatchers. Survey routes were digitized by Dudek using ArcGIS.

Recovery Permit Coordinator

Subject: 2010 California Gnatcatcher Focused Survey Results for the Mid-Coast Corridor Transit Project, City of San Diego, California.

Table 1
California Gnatcatcher Survey Details and Conditions

Date	Biologist's Initials	Time	Survey Conditions (skies, wind, temp)
8/6/2010	Kam Muri	0730–1235	100–10% cloud cover (% cc), 0-6 mile per hour (mph) winds, 65-70 degrees Fahrenheit (°F).
8/13/2010	Kam Muri	0730–1235	100–30% cc, 1-8 mph winds, 66-72°F
8/20/2010	Paul Lemons	0630–1330	0% cc, 0-5 mph winds with 6-10 mph gusts, 62-68°F

RESULTS

The survey area results are shown in Figure 4 to Figure 6. Two California gnatcatcher pairs were observed within the Mid-Coast Corridor Transit Project during focused surveys (Figures 5–6).

As shown in Figure 6, on August 6, 2010, biologist Kamarul Muri observed an individual male gnatcatcher within suitable habitat northeast of the I-5 and SR-52 interchange. On August 13, 2010, Mr. Muri observed a non-capped individual gnatcatcher within the same suitable habitat area as the previous visit's individual male observation. Biologist Paul Lemons observed a gnatcatcher pair within this same area on August 20, 2010. It is, therefore, assumed that this area is occupied by a single gnatcatcher pair.

A second gnatcatcher pair was observed in the north portion of the study area by Mr. Lemons on August 20, 2010. This pair was observed foraging within suitable habitat just south of Caminito Cassis Street, near the La Jolla Colony exit of I-5 (Figure 5).

Twenty-seven species of wildlife were observed during the surveys. A full list of wildlife species observed during the survey is provided in Appendix A. Please feel free to contact me at 760.942.5147 with questions or if you require additional information.

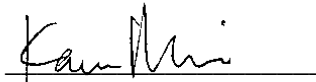
I certify that the information in this survey report and attached exhibits fully and accurately represent my work.

Sincerely,



Paul Lemons

Permit # TE051248-4



Kamarul Muri

Permit # TE051250-3

Att: *Figures 1–6*

Appendix A, List of Wildlife Species Observed or Detected at the Project Site

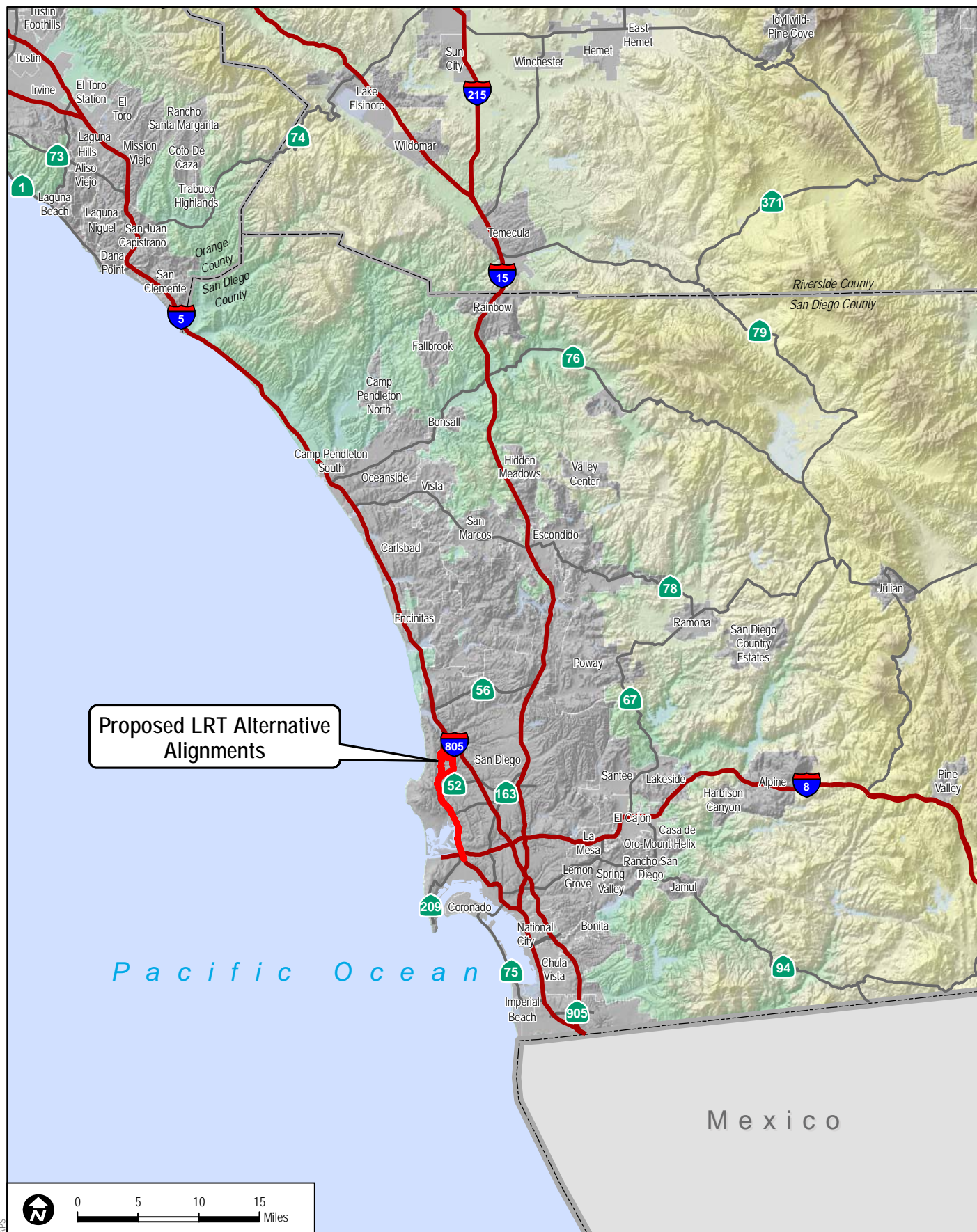
Recovery Permit Coordinator

*Subject: 2010 California Gnatcatcher Focused Survey Results for the Mid-Coast Corridor
Transit Project, City of San Diego, California.*

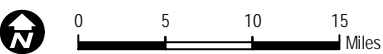
REFERENCES CITED

Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Nongame-Heritage Program. California Department of Fish and Game.

USFWS. (U.S. Fish and Wildlife Service). 1997. Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Protocol. Provided by the USFWS Carlsbad Fish and Wildlife Office on July 28, 1997.



Proposed LRT Alternative Alignments



DUDEK

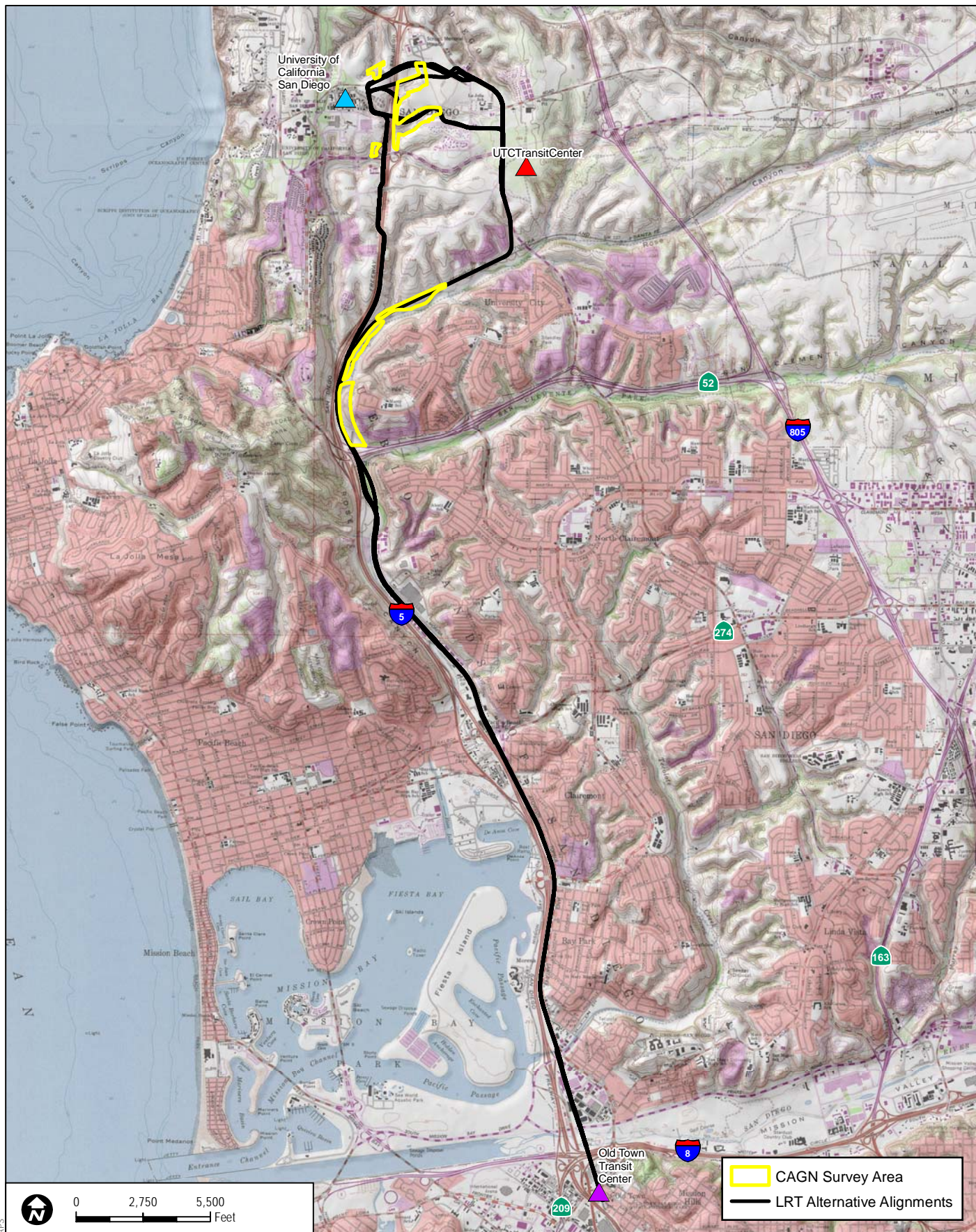
6099-01

SEPTEMBER 2010

SOURCE: SanGIS 2008.

Mid-Coast Corridor Transit Project - 2010 CAGN Survey Report

FIGURE 1
Regional Map



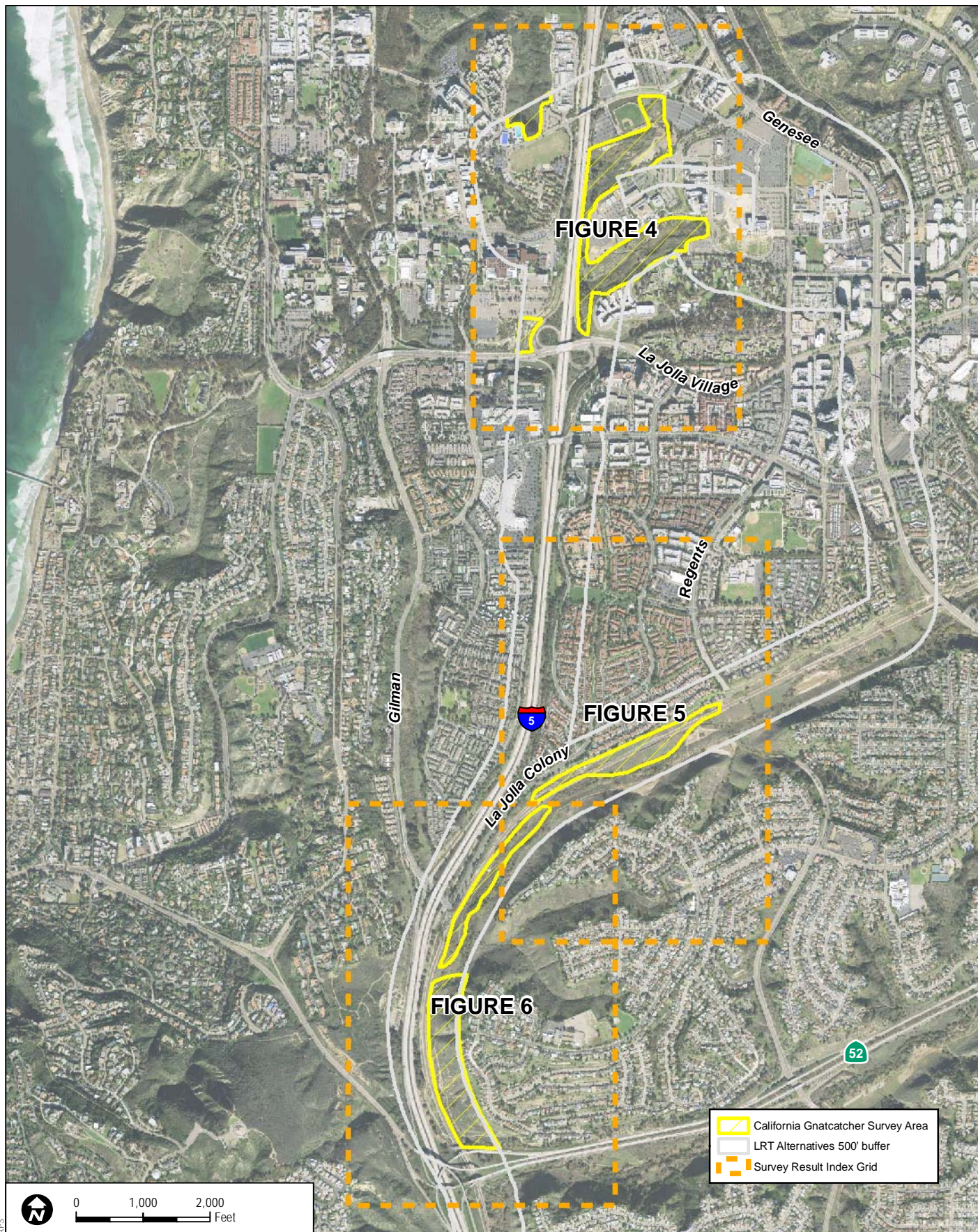


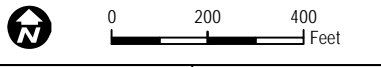
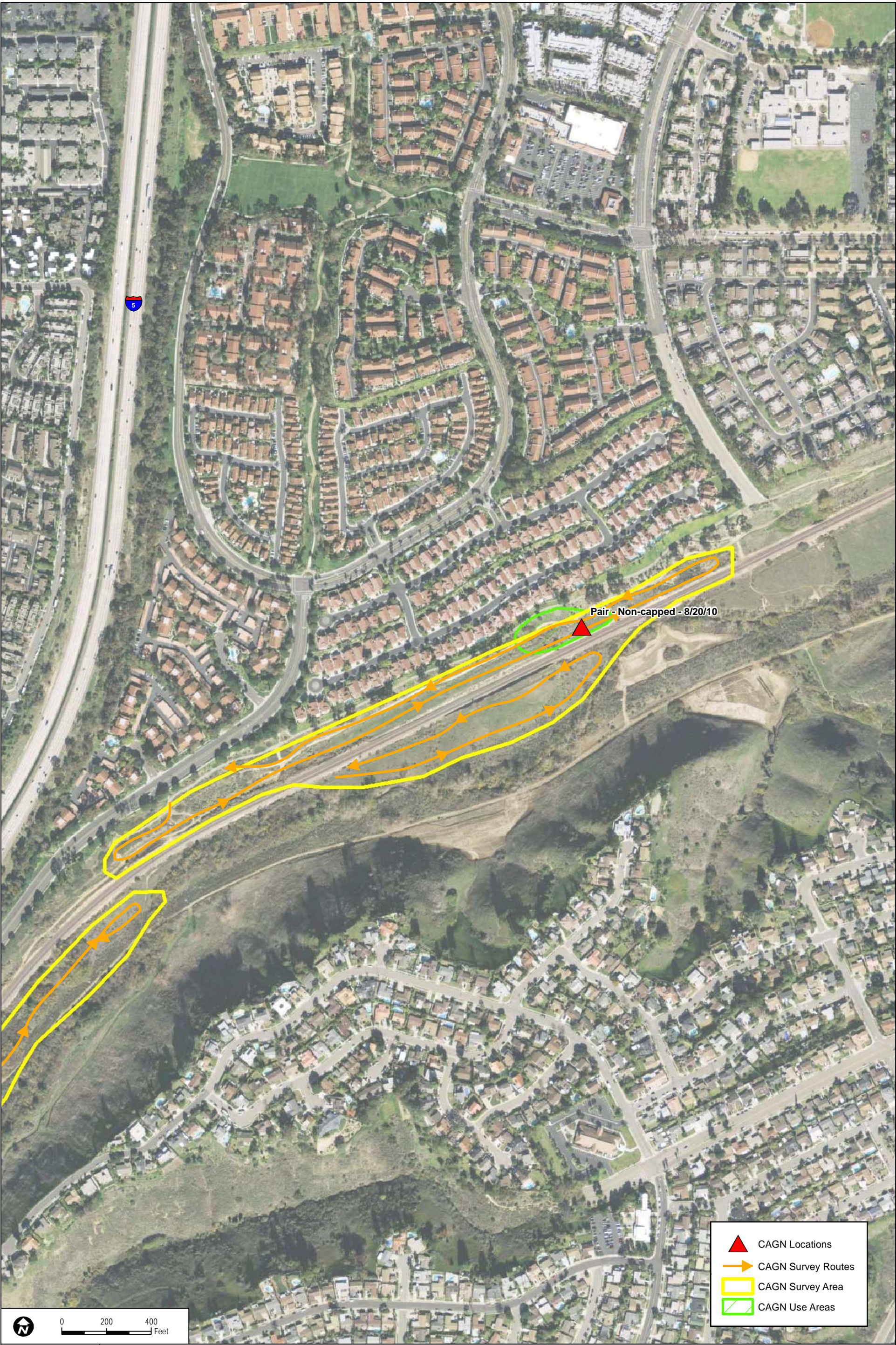
FIGURE 3
California Gnatcatcher Survey Area





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FIGURE 4
California Gnatcatcher Survey Results

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-  CAGN Locations
-  CAGN Survey Routes
-  CAGN Survey Area
-  CAGN Use Areas

DUDEK

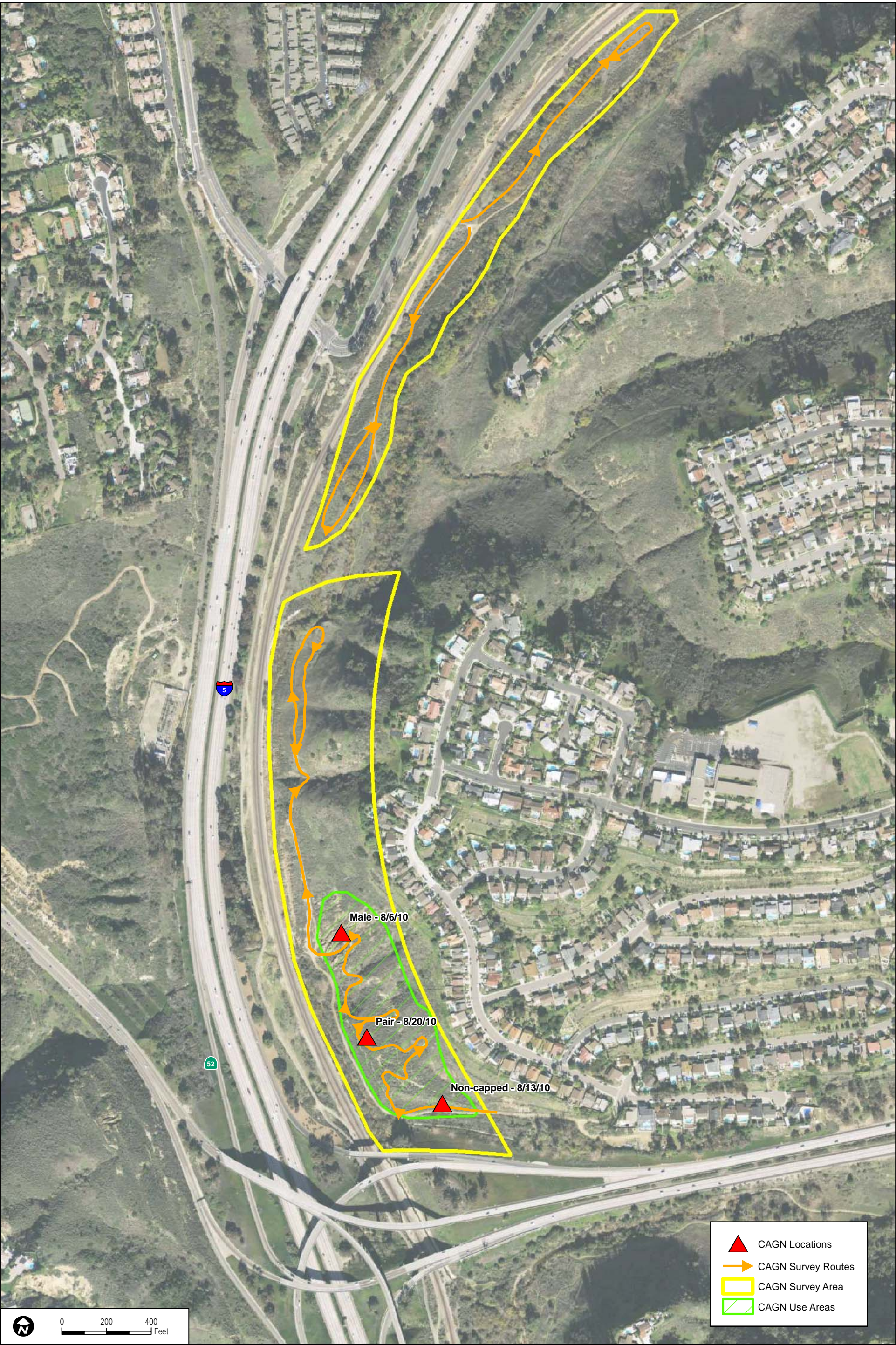
6099-01
SEPTEMBER 2010

SOURCE: DigitalGlobe 2008; Parsons
Brinckerhoff 2008; SANDAG 2007

Mid-Coast Corridor Transit Project - 2010 CAGN Survey Report

FIGURE 5
California Gnatcatcher Survey Results

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0 200 400 Feet

DUDEK

6099-01
SEPTEMBER 2010

SOURCE: DigitalGlobe 2008; Parsons
Brinckerhoff 2008; SANDAG 2007

Mid-Coast Corridor Transit Project - 2010 CAGN Survey Report

FIGURE 6
California Gnatcatcher Survey Results

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APPENDIX A

List of Wildlife Species

Observed or Detected at the Project Site

APPENDIX A

List of Wildlife Species Observed or Detected at the Project Site

WILDLIFE SPECIES – VERTEBRATES

REPTILES

***IGUANIDAE* – IGUANID LIZARDS**

Sceloporus occidentalis – western fence lizard

BIRDS

***ACCIPITRIDAE* – HAWKS**

Buteo jamaicensis – red-tailed hawk

***COLUMBIDAE* – PIGEONS AND DOVES**

* *Columba livia* – rock dove

Zenaida macroura – mourning dove

***TROCHILIDAE* – HUMMINGBIRDS**

Calypte anna – Anna's hummingbird

***TYRANNIDAE* – TYRANT FLYCATCHERS**

Sayornis nigricans – black phoebe

Sayornis saya – Say's phoebe

Tyrannus vociferans – Cassin's kingbird

***CORVIDAE* – JAYS AND CROWS**

Aphelocoma californica – western scrub-jay

Corvus corax – common raven

***AEGITHALIDAE* – BUSHTITS**

Psaltiriparus minimus – bushtit

***TROGLODYTIDAE* – WRENS**

Thryomanes bewickii – Bewick's wren

Troglodytes aedon – house wren

***SYLVIIDAE* – GNATCATCHERS**

Poliophtila californica – California gnatcatcher

***TIMALIIDAE* – LAUGHINGTHRUSH AND WRENTIT**

Chamaea fasciata – wrentit

APPENDIX A (Continued)

EMBERIZIDAE – BUNTINGS AND SPARROWS

Melospiza melodia – song sparrow

Pipilo crissalis – California towhee

ICTERIDAE – BLACKBIRDS AND ORIOLES

Molothrus ater – brown-headed cowbird

FRINGILLIDAE – FINCHES

Carpodacus mexicanus – house finch

Carduelis psaltria – lesser goldfinch

MAMMALS

LEPORIDAE – HARES AND RABBITS

Sylvilagus bachmani – brush rabbit

SCIURIDAE – SQUIRRELS

Spermophilus beecheyi – California ground squirrel

GEOMYIDAE – POCKET GOPHERS

Thomomys bottae – Botta's pocket gopher

WILDLIFE SPECIES – INVERTEBRATES

BUTTERFLIES AND MOTHS

PAPILIONIDAE – SWALLOWTAILS

Papilio rutulus – tiger swallowtail

PIERIDAE – WHITES AND SULFURS

Pieris rapae rapae – cabbage butterfly

Pontia protodice – checkered white

LYCAENIDAE – BLUES, HAIRSTREAKS, AND COPPERS

Icaria acmon acmon – acmon blue

* signifies introduced (non-native) species



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2012 California Gnatcatcher Focused Survey Results for the Mid-Coast Corridor Transit Project, City of San Diego, California



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October 4, 2012

6099-03

U.S. Fish and Wildlife Service
Attn: Recovery Permit Coordinator
6010 Hidden Valley Road
Carlsbad, California 92011

Subject: 2012 California Gnatcatcher Focused Survey Results for the Mid-Coast Corridor Transit Project, City of San Diego, California

Dear Recovery Permit Coordinator:

This report documents the results of three protocol-level presence/absence surveys for the coastal California gnatcatcher (*Polioptila californica californica*; gnatcatcher) conducted within approximately 18 acres of suitable gnatcatcher habitat within a portion of the study area located south of State Route (SR) 52. The surveys were conducted in all areas of suitable habitat, including coastal sage scrub, disturbed coastal sage scrub, and southern mixed chaparral adjacent to coastal sage scrub habitat.

The coastal California gnatcatcher is a federally listed threatened species and a California Department of Fish and Game species of Special Concern. It is closely associated with coastal sage scrub habitat and typically occurs below elevations of 950 feet above mean sea level (amsl) and on slopes less than 40 percent, but gnatcatchers have been observed at elevations greater than 2,000 feet amsl. The species is threatened primarily by loss, degradation, and fragmentation of coastal sage scrub habitat and is thought to be affected by brown-headed cowbird (*Molothrus ater*) nest parasitism.

LOCATION AND EXISTING CONDITIONS

The study area extends from the Old Town Transit Center (OTTC) north to University City in the western portion of the City of San Diego, San Diego County, California. The study area is generally bounded by the Pacific Ocean to the west, the Interstate (I-) 5/I-805 junction to the north, I-805 and State Route 163 to the east, and the OTTC and Mission Valley to the south (Figure 1). The proposed alignment of the Build Alternative within the study area generally runs along the east side of I-5 from just south of I-8 at the OTTC north to University City, through the University of California, San Diego campus, and along Genesee Avenue. The survey area, which is located just south of SR 52, is situated on the U.S. Geological Survey 7.5 minute La Jolla quadrangle, Township 15 South, Range 3 West, in Sections 30 and 31 (Figure 2).

VEGETATION COMMUNITIES

Vegetation communities on site that are suitable for coastal California gnatcatcher include Diegan coastal sage scrub and disturbed Diegan coastal sage scrub.

According to Holland (1986), Diegan coastal sage scrub (coastal sage scrub) vegetation is composed of a variety of soft, low shrubs, characteristically dominated by drought-deciduous species such as California sagebrush (*Artemisia californica*), flat-top buckwheat (*Eriogonum fasciculatum*), and sages (*Salvia* spp.), with scattered evergreen shrubs, including lemonadeberry (*Rhus integrifolia*) and laurel sumac (*Malosma laurina*). It typically develops on xeric slopes.

Disturbed coastal sage scrub is characterized by a lower percent cover of native species such as California sagebrush and flat-top buckwheat, and a higher percent cover of non-native forbs and grasses.

Coastal sage scrub subassociations include California sagebrush co-dominance with other seral sage scrub community species such as coyote bush scrub (*Baccharis pilularis*), broom baccharis (*Baccharis sarothroides*), or black sage (*Salvia mellifera*). These subassociations are considered suitable for gnatcatcher. The coastal sage scrub on site is dominated by California sagebrush, coyote brush (*Baccharis pilularis*), coastal goldenbush (*Isocoma menziesii*), and flat-top buckwheat with scattered black sage (*Salvia mellifera*).

METHODS

Approximately 18 acres of suitable habitat within the 2012 survey area was surveyed three times by Dudek wildlife biologist Kamarul J. Muri (Permit # TE051250-3) according to the schedule provided in Table 1. The survey area was limited to suitable habitat areas south of SR 52 within 500 feet of the project that were not included in the focused survey conducted for the project in 2010. The surveys were conducted in conformance with the currently accepted protocol of the U.S. Fish and Wildlife Service (FWS) (1997). A map of the survey area is provided in Figure 3.

A tape of recorded California gnatcatcher vocalizations played approximately every 50 to 100 feet was used to induce responses from potentially present California gnatcatchers. If a California gnatcatcher was detected, tape-playback was terminated to minimize potential for harassment. A 200-scale (1 inch = 200 feet) aerial map of the site was used to conduct focused California gnatcatcher surveys. Binoculars (10×50) were used to aid in detecting and identifying bird species. Weather conditions, time of day, and season were appropriate for the detection of California gnatcatchers. Survey routes were digitized by Dudek using ArcGIS.

Recovery Permit Coordinator

Subject: 2012 California Gnatcatcher Focused Survey Results for the Mid-Coast Corridor Transit Project, City of San Diego, California.

Table 1
California Gnatcatcher Survey Details and Conditions

Date	Biologist	Time	Survey Conditions (skies, wind, temp)
5/10/2012	Kam Muri	0930-1200	90-100% cloud cover (% cc), 2-4 mile per hour (mph) winds, 65-68 degrees Fahrenheit (°F).
5/22/2012	Kam Muri	0645-0930	0-100% cc, 1-2 mph winds, 61-69°F
06/15/2012	Kam Muri	0835-1145	100% cc, 1-2 mph winds, 61-65°F

Source: Dudek, 2012

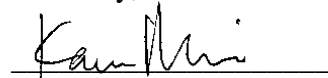
RESULTS

The survey results are shown in Figure 3. A single male California gnatcatcher was observed during the visit on May 22, 2012; no other gnatcatcher observations were made during the other survey visits. The male was detected near the top of the slope to the east of Rose Creek in the southern portion of the survey area. The male appeared briefly in response to tape playback, then flew northeast into habitat areas outside of the survey area in the adjacent side canyon. Although a female gnatcatcher was not observed, the gnatcatcher detection likely indicates the presence of a gnatcatcher pair and is assumed to represent an occupied gnatcatcher territory.

Thirty-six species of wildlife were observed during the surveys. A full list of wildlife species observed during the survey is provided in Appendix A. Please feel free to contact me at 760.942.5147 with questions or if you require additional information.

I certify that the information in this survey report and attached exhibits fully and accurately represent my work.

Sincerely,



Kamarul Muri

Permit # TE051250-3

Att: *Figures 1–3*

Appendix A, List of Wildlife Species Observed or Detected at the Project Site

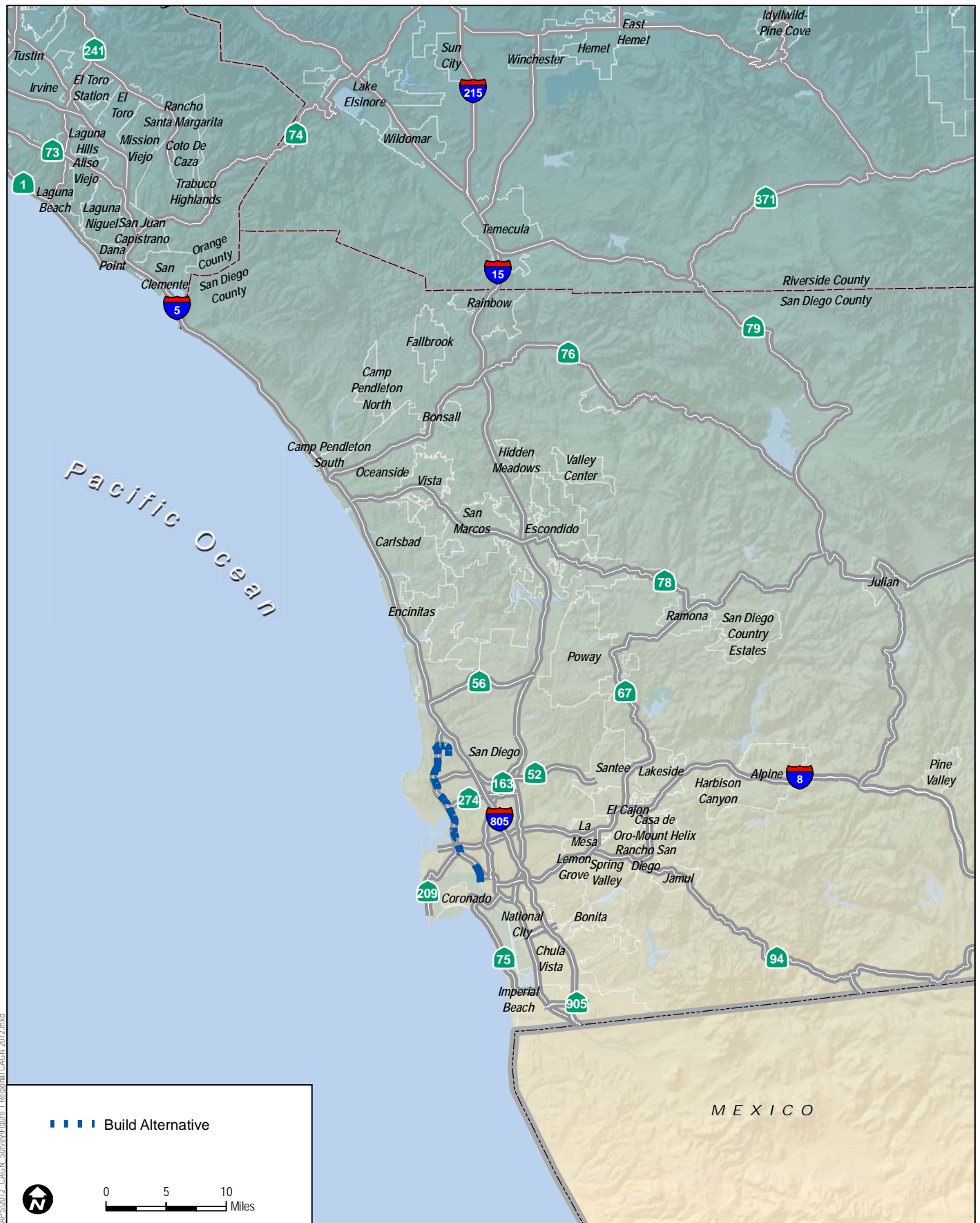
Recovery Permit Coordinator

*Subject: 2010 California Gnatcatcher Focused Survey Results for the Mid-Coast Corridor
Transit Project, City of San Diego, California.*

REFERENCES CITED

Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Nongame-Heritage Program. California Department of Fish and Game.

U.S. Fish and Wildlife Service (FWS). 1997. Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Protocol. Provided by the FWS Carlsbad Fish and Wildlife Office on July 28, 1997.



■ ■ ■ ■ Build Alternative



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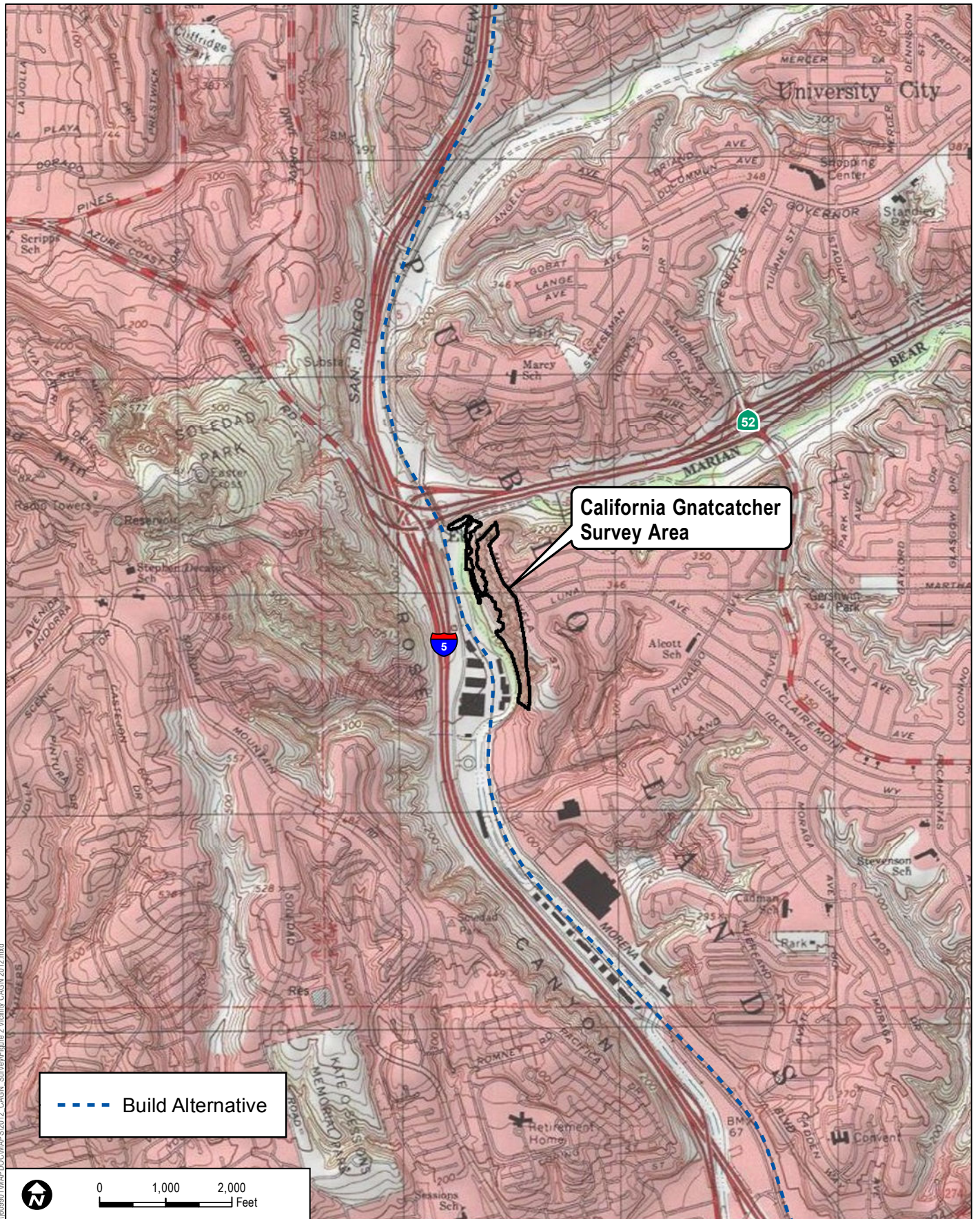
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AUGUST 2012

**FIGURE 1
Regional Map**

Mid-Coast Corridor Transit Project - 2012 California Gnatcatcher Survey Report



California Gnatcatcher
Survey Area

--- Build Alternative



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AUGUST 2012

SOURCE: USGS 7.5-Minute Series La Jolla Quadrangle.

Mid-Coast Corridor Transit Project - 2012 California Gnatcatcher Survey Report

FIGURE 2
Vicinity Map

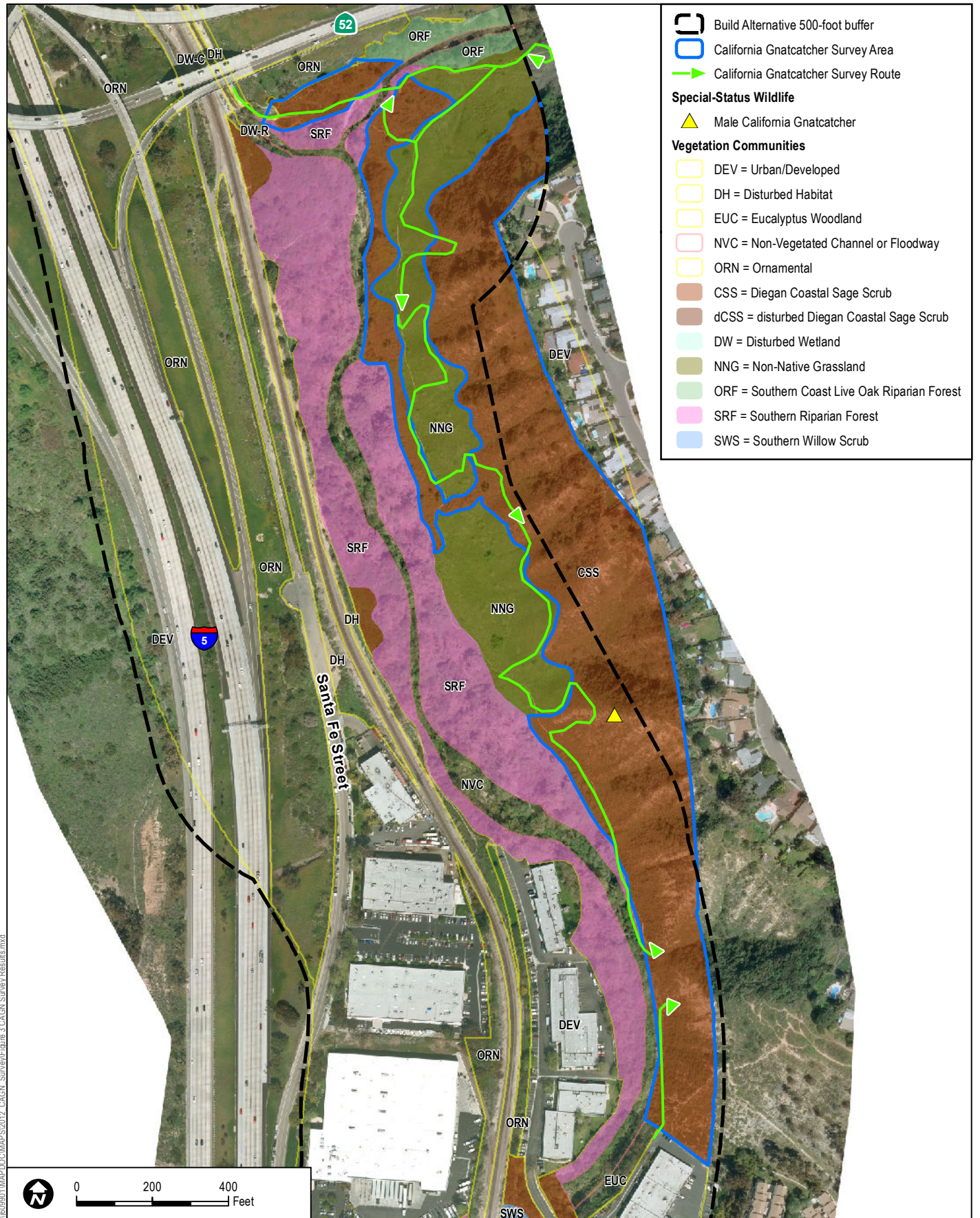


FIGURE 3

California Gnatcatcher Survey Results

SOURCE: Aerial PB 2010; Project Data PB 2012.

Mid-Coast Corridor Transit Project - 2012 California Gnatcatcher Survey Report

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AUGUST 2012

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APPENDIX A

List of Wildlife Species

Observed or Detected at the Project Site

APPENDIX A

List of Wildlife Species Observed or Detected at the Project Site

WILDLIFE SPECIES – VERTEBRATES

REPTILES

PHRYNOSOMATIDAE—IGUANID LIZARDS

Sceloporus occidentalis – western fence lizard

BIRDS

ACCIPITRIDAE – HAWKS

Buteo jamaicensis – red-tailed hawk

CARDINALIDAE—CARDINALS & ALLIES

Pheucticus melanocephalus—black-headed grosbeak

COLUMBIDAE – PIGEONS AND DOVES

* *Columba livia* – rock dove

Zenaida macroura – mourning dove

STURNIDAE—STARLINGS

* *Sturnus occidentalis* – European starling

TROCHILIDAE – HUMMINGBIRDS

Calypte anna – Anna's hummingbird

TYRANNIDAE – TYRANT FLYCATCHERS

Sayornis nigricans – black phoebe

Sayornis saya – Say's phoebe

Tyrannus vociferans – Cassin's kingbird

CORVIDAE – JAYS AND CROWS

Aphelocoma californica – western scrub-jay

Corvus corax – common raven

AEGITHALIDAE – BUSHTITS

Psaltiriparus minimus – bushtit

TROGLODYTIDAE – WRENS

Thryomanes bewickii – Bewick's wren

Troglodytes aedon – house wren

APPENDIX A (Continued)

SYLVIIDAE – GNATCATCHERS

Poliophtila californica – California gnatcatcher

TIMALIIDAE – LAUGHINGTHRUSH AND WRENTIT

Chamaea fasciata – wrentit

EMBERIZIDAE – BUNTINGS AND SPARROWS

Melospiza melodia – song sparrow

Pipilo crissalis – California towhee

Pipilo maculatus - spotted towhee

HIRUNDINIDAE—SWALLOWS

Petrochelidon pyrrhonota - Cliff swallow

ICTERIDAE – BLACKBIRDS AND ORIOLES

Molothrus ater – brown-headed cowbird

PARULIDAE—WOOD-WARBLERS

Geothlypis trichas — common yellowthroat

Oreothlypis celata—orange-crowned warbler

PICIDAE—WOODPECKERS & ALLIES

Picoides nuttallii—Nuttall's woodpecker

FRINGILLIDAE – FINCHES

Carpodacus mexicanus – house finch

Carduelis psaltria – lesser goldfinch

MAMMALS

CANIDAE—WOLVES & FOXES

Canis latrans — Coyote (scat)

LEPORIDAE – HARES AND RABBITS

Sylvilagus bachmani – brush rabbit

SCIURIDAE – SQUIRRELS

Spermophilus beecheyi – California ground squirrel

GEOMYIDAE – POCKET GOPHERS

Thomomys bottae – Botta's pocket gopher

APPENDIX A (Continued)

***PROCYONIDAE*—RACCOONS & RELATIVES**

Procyon lotor—raccoon (track)

WILDLIFE SPECIES – INVERTEBRATES

BUTTERFLIES AND MOTHS

***PAPILIONIDAE* – SWALLOWTAILS**

Papilio rutulus – tiger swallowtail

***PIERIDAE* – WHITES AND SULFURS**

Pieris rapae rapae – cabbage butterfly

Pontia protodice – checkered white

***LYCAENIDAE* – BLUES, HAIRSTREAKS, AND COPPERS**

Icaria acmon acmon – acmon blue

* signifies introduced (non-native) species



2010 Least Bell's Vireo and Southwestern Willow Flycatcher Focused Survey Results for the Mid-Coast Corridor Transit Project, City of San Diego, California



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September 22, 2010

6099-02

U.S. Fish and Wildlife Service
Attn: Recovery Permit Coordinator
6010 Hidden Valley Road, Suite 100
Carlsbad, California 92011

Subject: 2010 Least Bell's Vireo and Southwestern Willow Flycatcher Focused Survey Results for the Mid-Coast Corridor Transit Project, City of San Diego, California

Dear Recovery Permit Coordinator:

This report documents the results of eight protocol-level presence/absence surveys for the state- and federally listed endangered least Bell's Vireo (*Vireo bellii pusillus*; vireo), and the state- and federally listed endangered southwestern willow flycatcher (*Empidonax traillii extimus*; flycatcher). These focused surveys were conducted within approximately 103 acres of suitable habitat within a portion of the Mid-Coast Corridor Transit Project study area between the Old Town Transit Center (OTTC) in the south and La Jolla Colony Drive in the north. The surveys were conducted in all areas of suitable vireo and flycatcher habitat located within 500 feet of the proposed light rail transit (LRT) alternative alignments.

The southwestern willow flycatcher and least Bell's vireo are closely associated with riparian habitats, especially densely vegetated willow scrub and riparian forest vegetation. These species are threatened primarily by loss, degradation, and fragmentation of riparian habitats. They also are impacted by brown-headed cowbird (*Molothrus ater*) nest parasitism.

LOCATION AND EXISTING CONDITIONS

The Mid-Coast Corridor Transit Project study area extends from OTTC north to University City, in the western portion of the City of San Diego, San Diego County, California. The following communities are included in this area: University City, La Jolla, Clairemont Mesa, Pacific Beach, Mission Beach, Linda Vista, and Old Town. The project study area is bounded by the Pacific Ocean to the west, the I-5/I-805 junction to the north, I-805 and SR-163 to the east, and OTTC and Mission Valley to the south (Figure 1). The proposed LRT alternative alignments

within the project study area generally run along I-5 from just south of I-8 at OTTC north to Genesee Avenue in University City, situated on the U.S. Geological Survey 7.5 minute Del Mar and La Jolla quadrangles, Township 15 South, Range 3 West, in Section 17 (Figure 2).

VEGETATION COMMUNITIES

Based on existing vegetation community data from the Multiple Species Conservation Program (MSCP) (SANGIS 2006), the 103-acre survey area in the project study area contains four southern riparian vegetation communities: southern cottonwood-willow riparian forest, southern riparian forest, southern riparian scrub and southern sycamore-alder riparian woodland (Figure 3). Native uplands communities and disturbed habitat also occur throughout the survey area. Suitable riparian vegetation communities occurring within the 103-acre survey area are described below.

Southern Cottonwood-willow Riparian Forest

Southern cottonwood-willow riparian forest is a southern riparian forest community. This community is a tall, open, broad-leaved winter deciduous riparian forest dominated by Fremont's cottonwood (*Populus fremontii*) and several different species of willow (*Salix* spp.) (Holland 1986). It occurs in frequently overflowed lands along rivers and streams. This community is mapped along the San Diego River, northeast of the I-5/I-805 junction at the southernmost end of the project study area. Southern cottonwood-willow riparian forest represents less than 10 acres of the total survey area.

Southern Riparian Forest

Southern riparian forest occurs in deep canyons and along stream and valley bottoms. This community type occurs where the water table is not far below the soil surface. Southern riparian forest is dominated by winter deciduous trees such as cottonwoods (*Populus fremontii*, *P. trichocarpa*) or arroyo willow (*Salix lasiolepis*), but can also be dominated by the evergreen coast live oak (*Quercus agrifolia*). Riparian vegetation provides important habitat for many wildlife species. Southern riparian forest occurs in Rose Canyon along La Jolla Colony Drive. Southern riparian forest is represented by less than 0.1 acres in the total survey area.

Southern Riparian Scrub

Southern riparian scrub occurs where the water table is not far below the soil surface in deep canyons and along stream and valley bottoms. Southern riparian scrub is dominated by mulefat (*Baccharis salicifolia*) or several willow species with scattered emergent Fremont's cottonwood

and western sycamore (*Platanus racemosa*). Riparian vegetation supports a wide array of wildlife species. Within the survey area, southern riparian scrub is dominated by willows and significant patches of giant reed (*Arundo donax*), and it occurs primarily along Rose Creek parallel to and east of I-5, south of SR-52 and north of Balboa Avenue. This community is also mapped in the project study area along the San Diego River. There is a total of 30.5 acres of southern riparian scrub within the project study area.

Southern Sycamore–Alder Riparian Woodland

Southern sycamore–alder riparian woodland is described by Holland (1986) as a tall, open, broadleaved, winter-deciduous streamside woodland dominated by well-spaced western sycamore and often also white alder (*Alnus rhombifolia*). Seldom forming closed canopy forests, these stands may appear as trees scattered in a shrubby thicket of sclerophyllous and deciduous species and are subject to seasonally high-intensity flooding. Characteristic species of this habitat type include California mugwort (*Artemisia douglasiana*), coast live oak, California blackberry (*Rubus ursinus*), California laurel (*Umbellularia californica*), and giant stinging nettle (*Urtica holosericea*). This community stretches along Rose Creek parallel to and east of I-5, near the I-5/SR-52 interchange. It is the most prominent riparian community in the survey area (63.7 acres).

METHODS

Suitable habitat areas within the project study area were surveyed eight times (Table 1) by Dudek wildlife biologists Brock A. Ortega (BAO; Permit # TE 813545), Paul M. Lemons (PML, Permit # TE 051248), Kamarul J. Muri (KJM), and Patricia C. Schuyler (PCS) for vireo and flycatcher. Focused surveys for these species were initiated on May 14, 2010, and continued through July 29, 2010.

Table 1
Survey Conditions

Survey Pass	Survey Area	Date	Hours	Personnel	Focus	Conditions
1	North	5/14/10	0630–1000	PCS	LBVI	80% cc, 0–5 mph wind, 55°F–65°F
1	South	5/14/10	0745–1130	KJM	LBVI	70%–10% cc, 1–5 mph wind, 62°F–66°F;
2	North	5/24/10	0530–1100	BAO	LBVI/SWFL	100% cc, 0 mph wind, 53°F–63°F
2	South	5/24/10	0700–1040	PML	LBVI/SWFL	0% cc, 0–4 mph wind, 57°F–72°
3	North	6/4/10	0530–0915	BAO	LBVI/SWFL	100%–20% cc, 0 mph wind, 62°F–, 67°F
3	South	6/3/10	0715–1045	KJM	LBVI	10%–100% cc, 1–7 mph wind, 68°F–66°F

Table 1 (Continued)

Survey Pass	Survey Area	Date	Hours	Personnel	Focus	Conditions
4	South	6/14/10	0600–1000	BAO	LBVI/SWFL	100% cc, 3 mph–0 mph wind, 63°F–66°F
4	North	6/15/10	0700–1100	KJM	LBVI	100%–20% cc, 1–5 mph wind, 66°F–68°F
5	North	6/24/10	0500–1000	BAO	LBVI/SWFL	100% cc, 0 mph wind, 60°F
5	South	6/24/10	0600–1015	PML	LBVI/SWFL	100%–10% cc, 2–5 mph wind, 61°F–71°F
6	North	7/6/10	0545–1130	PML	LBVI/SWFL	100% cc, 0–4 mph wind, 62°F–66°F
6	South	7/6/10	0530–1030	BAO	LBVI/SWFL	100% cc, 0–4 mph wind, 60°F–63°F
7	North	7/16/10	0545–1100	BAO	LBVI/SWFL	100%–70% cc, 0–3 mph wind, 66°F–70°F
7	South	7/16/10	0700–1100	PML	LBVI/SWFL	10%–5% cc, 0–4 mph wind, 63°F–83°F
8	North	7/29/10	0630–1000	PCS	LBVI	100% cc, 0–5 mph wind, 60°F–65°F
8	South	7/29/10	0715–1200	KJM	LBVI	100%–50% cc, 0–5 mph wind, 64°F–84°F

Areas surveyed in 2010 included suitable habitat within the San Diego River, mainly to the east of I-5, and Rose Creek, approximately parallel to and east of I-5 from Balboa Avenue north to La Jolla Colony Drive (Figure 3). A total of 13,800 linear feet of suitable habitat is within the survey area. The entire linear length of suitable habitat surveyed was approximately 4.2 kilometers.

Surveys for flycatcher were conducted concurrently with the vireo surveys. All surveys consisted of slowly walking a methodical, meandering transect within and adjacent to all riparian habitat on site. The perimeter also was surveyed. This route was arranged to cover all suitable habitat on site (depicted on Figures 4–6). A vegetation map (1:2,400 scale; 1 inch=200 feet) of the project site was available to record any detected vireo or flycatcher. Binoculars (7×50; 10×42; 10×50) were used to aid in detecting and identifying wildlife species.

The five surveys conducted for flycatcher followed the currently accepted protocol (Sogge et al., 1997 in conjunction with the 2000 *Southwestern Willow Flycatcher Protocol Revision* issued by the U.S. Fish and Wildlife Service (USFWS)), which states that a minimum of five survey visits is needed to evaluate project effects on flycatchers. It is recommended that one survey is made during the period from May 15–31, one survey from June 1–21, and three surveys between June 22 and July 17. A tape of recorded flycatcher vocalizations was used, approximately every 50–100 feet within suitable habitat, to induce flycatcher responses. If a flycatcher had been detected, playing of the tape would have ceased to avoid harassment.

A Section 10(a)(1)(A) permit is not required to conduct presence/absence surveys for vireo. The eight surveys for vireo followed the currently accepted *Least Bell's Vireo Survey Guidelines*

(USFWS 2001), which states that a minimum of eight survey visits should be made to all riparian areas and any other potential vireo habitats during the period from April 10 to July 31. The site visits are required to be conducted at least 10 days apart to maximize the detection of early and late arrivals, females, non-vocal birds, and nesting pairs. Taped playback of vireo vocalizations were not used during the surveys. Surveys were conducted between dawn and 1200 and were not conducted during periods of excessive or abnormal cold, heat, wind, rain, or other inclement weather.

Weather conditions, time of day and season were appropriate for the detection of flycatcher and vireo (Table 1).

RESULTS

No least Bell's vireo or southwestern willow flycatcher were observed during the focused surveys. Other sensitive species observed included coastal California gnatcatcher (*Poliophtila californica californica*), a federally listed threatened species, yellow-breasted chat (*Icteria virens*), a California Department of Fish and Game (CDFG) Species of Special Concern, yellow warbler (*Dendroica petechia*), a CDFG Species of Special Concern, and white-tailed kite (*Elanus leucurus*), a CDFG Fully Protected species (Figures 4–6). In addition, brown-headed cowbird (*Molothrus ater*) was observed in the San Diego River and along Rose Creek.

Ninety-six wildlife species were observed during the focused surveys. A full list of wildlife species observed during the survey is provided in Appendix A. Data forms (USFWS 2004) for willow flycatcher are included as Appendix B.

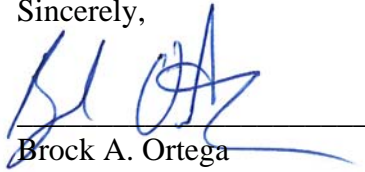
Please feel free to contact me at 760.479.4254 with questions or if you require additional information.


Recovery Permit Coordinator

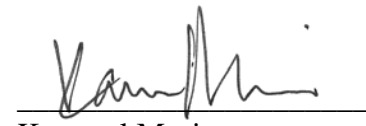
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for the Mid-Coast Corridor Transit Project, City of San Diego, California*

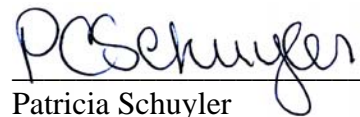
I certify that the information in this survey report and attached exhibits fully and accurately represent my work.

Sincerely,


Brock A. Ortega
Senior Wildlife Biologist


Paul Lemons
Wildlife Biologist


Kamarul Muri
Wildlife Biologist


Patricia Schuyler
Wildlife Biologist

*Att: Figures 1–6
Appendices A–B*

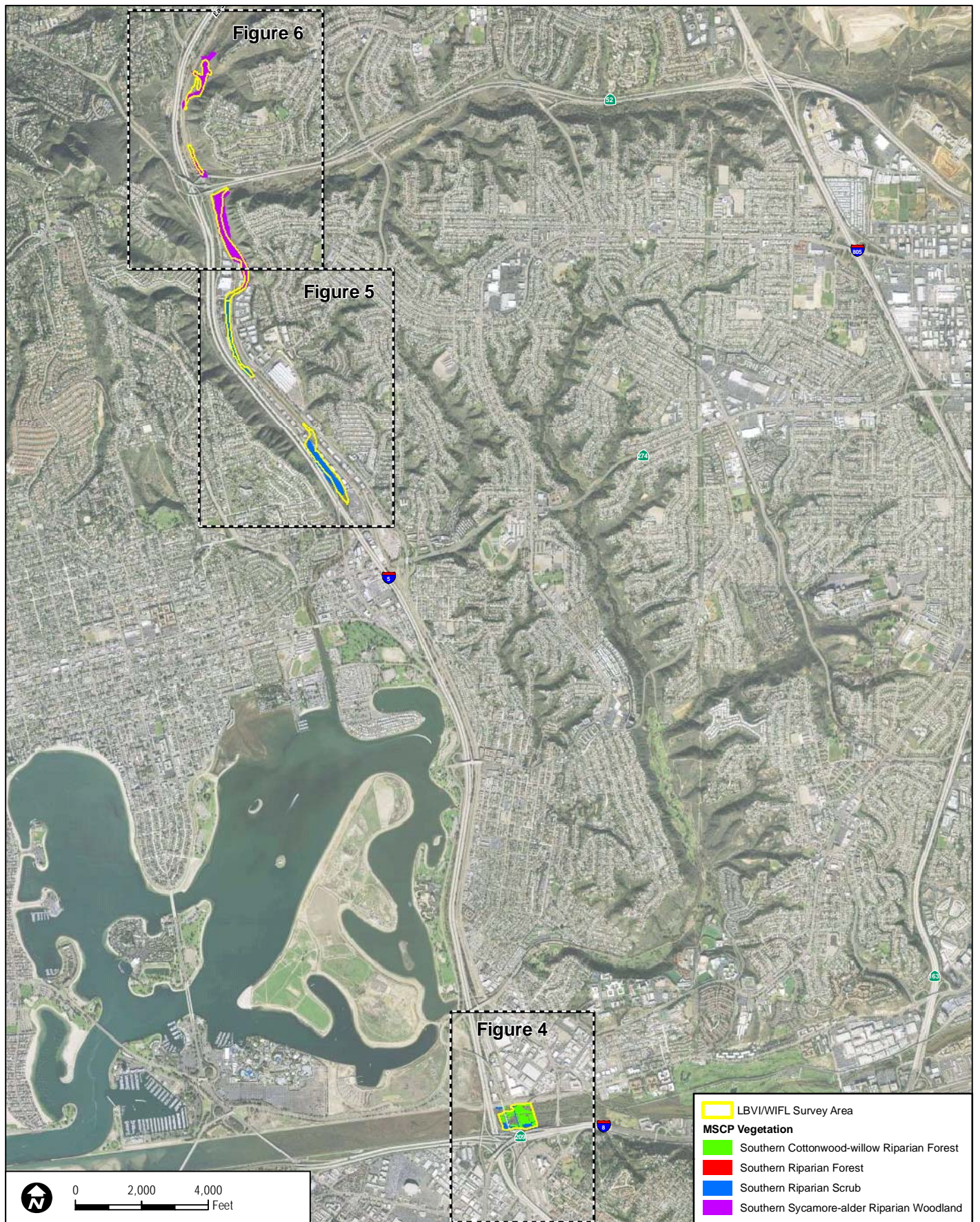
Recovery Permit Coordinator

*Subject: 2009 Least Bell's Vireo and Southwestern Willow Flycatcher Focused Survey Results
for the Mid-Coast Corridor Transit Project, City of San Diego, California*

REFERENCES

- Holland, R.F. 1986. *Preliminary descriptions of the terrestrial natural communities of California. Nongame-Heritage Program, California Department of Fish and Game.*
- SANGIS. 2006. *Vegetation Information in the San Diego Region.* Shapefile. Maintained by San Diego County Department of Planning and Land Use and updated from 1995 using aerial imagery and georeferenced bio-maps.
- Sogge, M.K., R.M. Marshall, S.J. Sferra, and T.J. Tibbitts. 1997. *A southwestern willow flycatcher natural history summary and survey protocol.* National Park Service. U.S. Department of Interior.
- USFWS (U.S. Fish and Wildlife Service). 2000. *Southwestern Willow Flycatcher Protocol Revision 2000.* July 11.
- USFWS. 2001. *Least Bell's Vireo Survey Guidelines.* January 19.
- USFWS. 2004. *Willow Flycatcher Survey and Detection Form* (revised). April.





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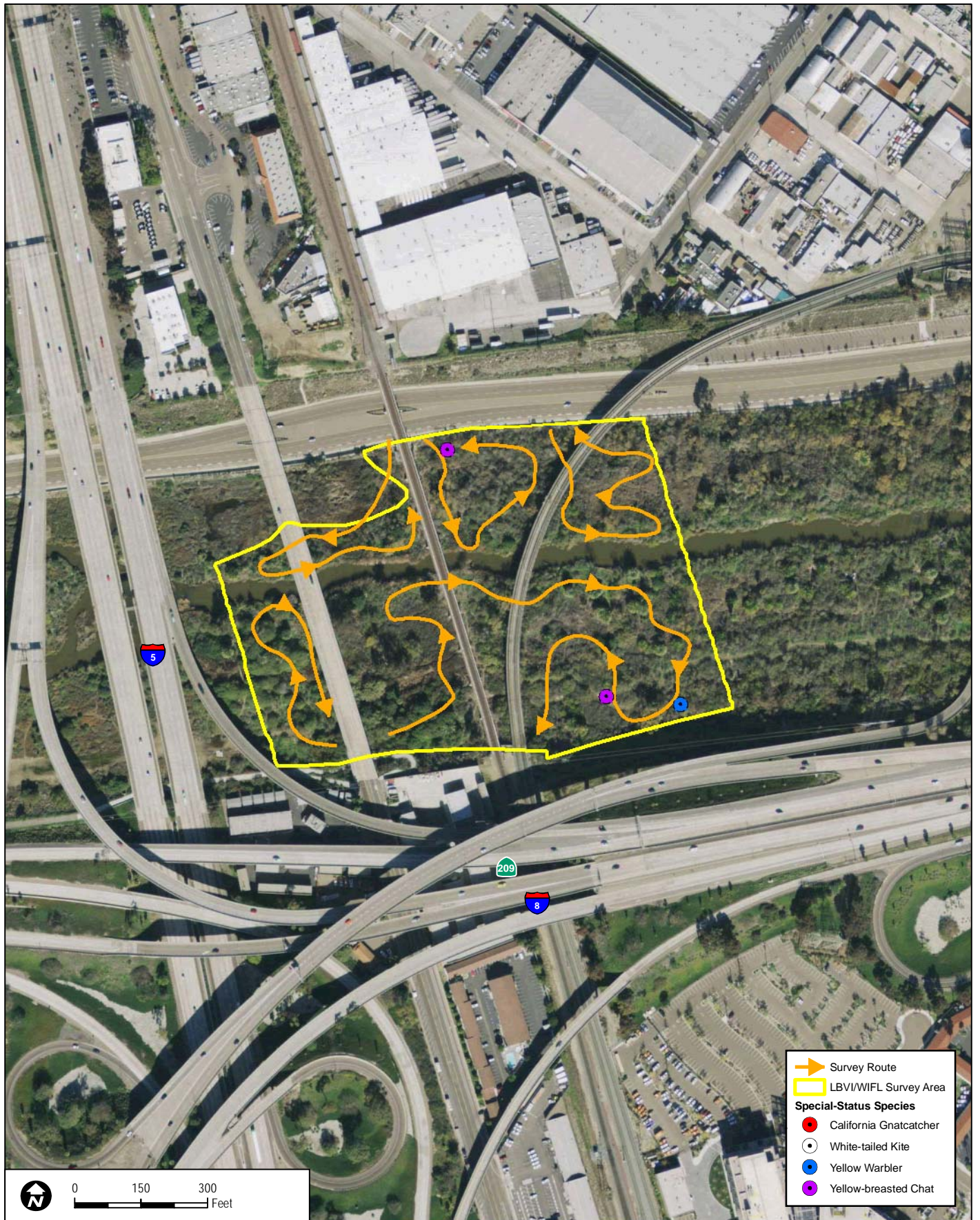
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SEPTEMBER 2010

SOURCE: DigitalGlobe 2008; Parsons
Brinckerhoff 2010; SANDAG 2007

FIGURE 3 **Least Bell's Vireo/Southwestern Willow Flycatcher** **Survey Area and Index Map**

Mid-Coast Corridor Transit Project - 2010 LBVI and WIFL Survey Report



DUDEK

6099-01

SEPTEMBER 2010

SOURCE: DigitalGlobe 2008; Parsons
Brinckerhoff 2010; SANDAG 2007

Least Bell's Vireo/Southwestern Willow Flycatcher Survey Results - San Diego River

FIGURE 4

Mid-Coast Corridor Transit Project - 2010 LBVI and WIFL Survey Report

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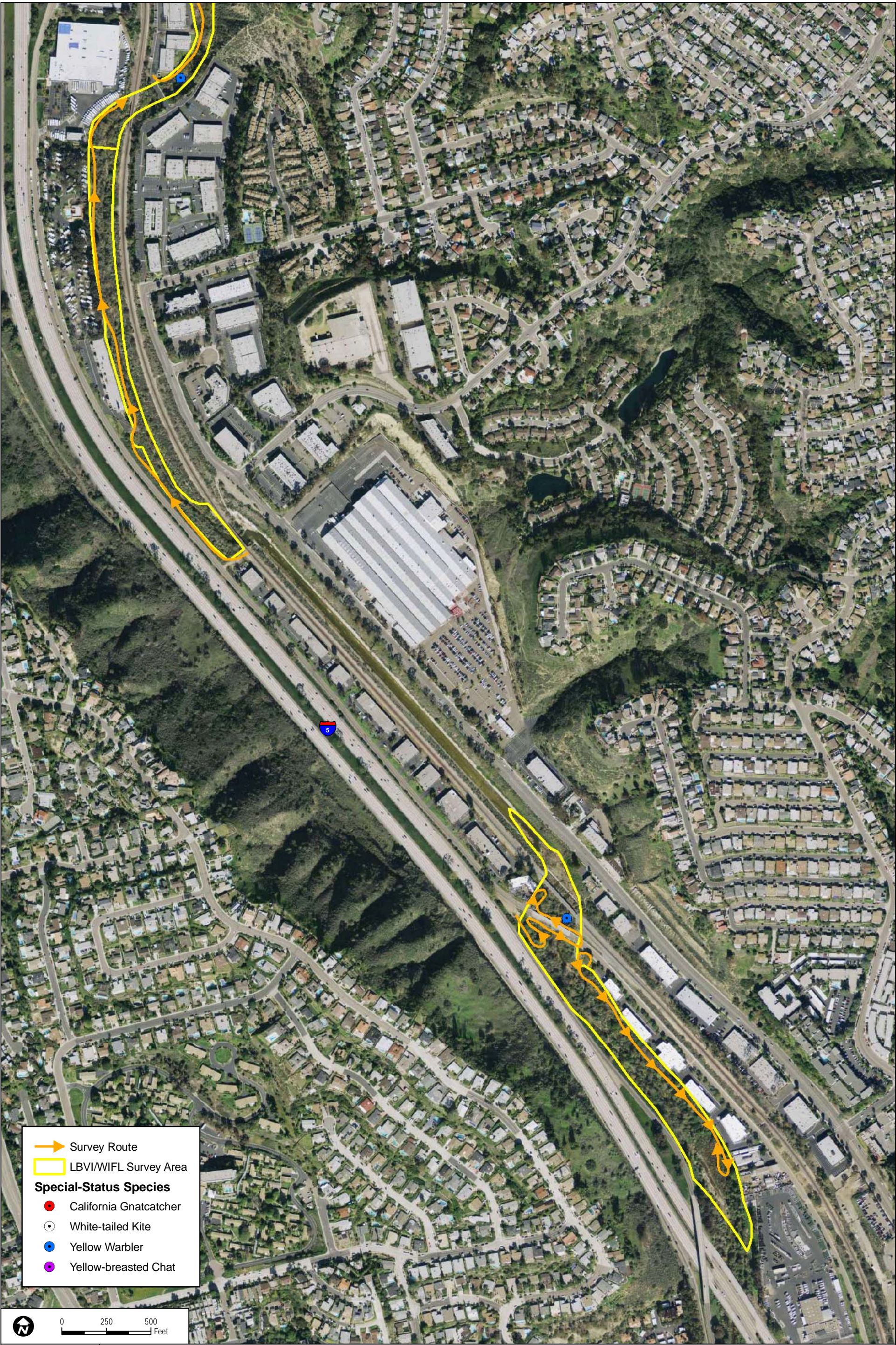


FIGURE 5
Least Bell's Vireo/Southwestern Willow Flycatcher
Survey Results - Rose Creek South

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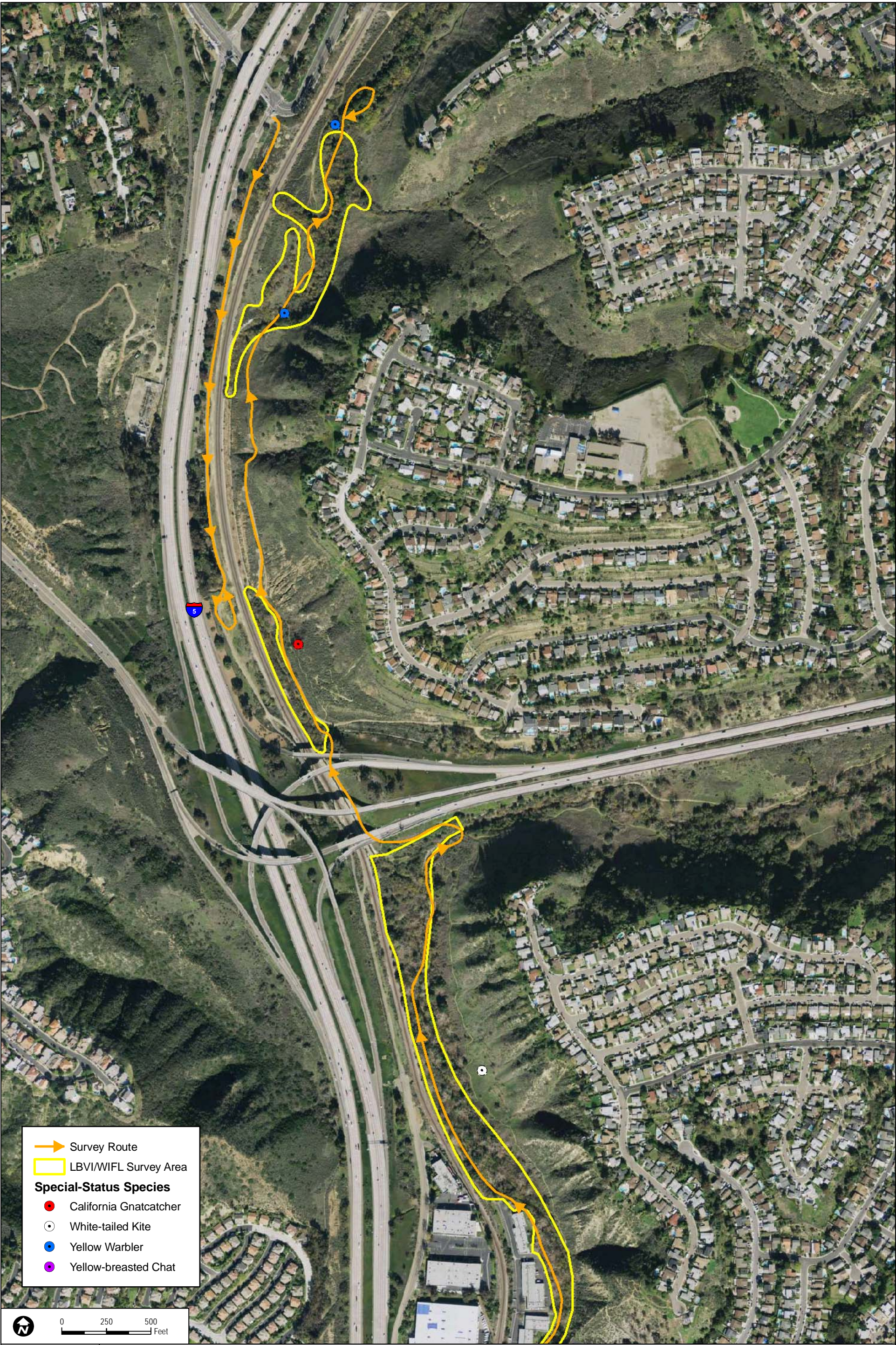


FIGURE 6
Least Bell's Vireo/Southwestern Willow Flycatcher
Survey Results - Rose Creek North

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APPENDIX A

Wildlife Species Observed in Study Area

APPENDIX A

Wildlife Species Observed in Study Area

WILDLIFE SPECIES – VERTEBRATES

AMPHIBIANS

***PLETHODONTIDAE* – LUNGLESS SALAMANDERS**

Batrachoseps pacificus – Channel Islands slender salamander

***PIPIDAE* – TONGUELESS FROGS**

* *Xenopus laevis* – African clawed frog

***BUFONIDAE* – TRUE TOADS**

Anaxyrus boreas – Western toad

***HYLIDAE* – TREEFROGS**

Hyla regilla – Pacific treefrog

REPTILES

***EMYDIDAE* – BOX AND POND TURTLES**

* *Pseudemys scripta* – red-eared slider

***IGUANIDAE* – IGUANID LIZARDS**

Sceloporus occidentalis – western fence lizard

Uta stansburiana – common side-blotched lizard

***COLUBRIDAE* – COLUBRID SNAKES**

Pituophis cantifer – gopher snake

***VIPERIDAE* – VIPERS**

Crotalus viridis helleri – southern pacific rattlesnake

FISHES

***CYPRINIDAE* – CARP**

* *Cyprinidae* sp. – carp

APPENDIX A (Continued)

BIRDS

PODICIPEDIDAE – GREBES

Podilymbus podiceps – pied-billed grebe

PHALOCROCORACIDAE – CORMORANTS

Phalacrocorax auritus – double-crested cormorant

Phalacrocorax sp. – cormorant

ARDEIDAE – HERONS

Ardea herodias – great blue heron

Butorides virescens – green heron

Ardea alba – great egret

Egretta thula – snowy egret

Nycticorax nycticorax – black-crowned night-heron

ANATIDAE – DUCKS, GEESE, AND SWANS

Anas platyrhynchos – mallard

ACCIPITRIDAE – HAWKS

Buteo jamaicensis – red-tailed hawk

Elanus leucurus – white-tailed kite

FALCONIDAE – CARACARAS AND FALCONS

Falco sparverius – American kestrel

ODONTOPHORIDAE – NEW WORLD QUAILS

Callipepla californica – California quail

RALLIDAE – RAILS, GALLINULES AND COOTS

Fulica americana – American coot

Gallinula chloropus – common moorhen

Porzana carolina – sora

CHARADRIIDAE – LAPWINGS AND PLOVERS

Charadrius vociferus – killdeer

SCOLOPACIDAE – SANDPIPERS, PHALAROPES AND ALLIES

Numenius americanus – long-billed curlew

APPENDIX A (Continued)

LARIDAE – GULLS, TERNS, AND SKIMMERS

Larus sp. – gull

Sterna sp. – tern

COLUMBIDAE – PIGEONS AND DOVES

Columba livia – rock pigeon

Zenaida macroura – mourning dove

TYTONIDAE – BARN OWLS

Tyto alba – barn owl

APODIDAE – SWIFTS

Aeronautes saxatalis – white-throated swift

TROCHILIDAE – HUMMINGBIRDS

Calypte anna – Anna's hummingbird

Calypte costae – Costa's hummingbird

ALCEDINIDAE – KINGFISHERS

Ceryle alcyon – belted kingfisher

PICIDAE – WOODPECKERS

Picoides nuttallii – Nuttall's woodpecker

Picoides pubescens – downy woodpecker

TYRANNIDAE – TYRANT FLYCATCHERS

Empidonax difficilis – Pacific-slope flycatcher

Myiarchus cinerascens – ash-throated flycatcher

Sayornis nigricans – black phoebe

Tyrannus vociferans – Cassin's kingbird

HIRUNDINIDAE – SWALLOWS

Petrochelidon pyrrhonota – cliff swallow

Stelgidopteryx serripennis – northern rough-winged swallow

CORVIDAE – JAYS AND CROWS

Apelocoma californica – western scrub-jay

Corvus brachyrhynchos – American crow

Corvus corax – common raven

APPENDIX A (Continued)

AEGITHALIDAE – BUSHTITS

Psaltiriparus minimus – bushtit

TROGLODYTIDAE – WRENS

Thryomanes bewickii – Bewick's wren

Troglodytes aedon – house wren

REGULIDAE – KINGLETS

Regulus calendula – ruby-crowned kinglet

SYLVIIDAE – SYLVIID WARBLERS

Chamaea fasciata – wrentit

MIMIDAE – MOCKINGBIRDS AND THRASHERS

Mimus polyglottos – northern mockingbird

STURNIDAE – STARLINGS

* *Sturnus vulgaris* – European starling

PARULIDAE – WOOD WARBLERS

Dendroica petechia – yellow warbler

Geothlypis trichas – common yellowthroat

Icteria virens – yellow-breasted chat

Oreothlypis celata – orange-crowned warbler

EMBERIZIDAE – EMBERIZIDS

Melospiza melodia – song sparrow

Melospiza crissalis – California towhee

Pipilo maculatus – spotted towhee

CARDINALIDAE – CARDINALS AND ALLIES

Pheucticus melanocephalus – black-headed grosbeak

ICTERIDAE – BLACKBIRDS

Agelaius phoeniceus – red-winged blackbird

Euphagus cyanocephalus – Brewer's blackbird

Icterus cucullatus – hooded oriole

Icterus bullockii – Bullock's oriole

Molothrus ater – brown-headed cowbird

APPENDIX A (Continued)

FRINGILLIDAE – FINCHES

Carpodacus mexicanus – house finch

Spinus psaltria – lesser goldfinch

Spinus tristis – American goldfinch

PSITTACIDAE – PARROTS

* *Amazona viridigenalis* – red-crowned parrot

MAMMALS

DIDELPHIDAE – NEW WORLD OPOSSUMS

Didelphis virginiana – Virginia opossum

LEPORIDAE – HARES AND RABBITS

Sylvilagus bachmani – brush rabbit

SCIURIDAE – SQUIRRELS

Spermophilus beecheyi – California ground squirrel

GEOMYIDAE – POCKET GOPHERS

Thomomys bottae – Botta's pocket gopher

MURIDAE – RATS AND MICE

Microtus californicus – California vole

Neotoma sp. – woodrat

* *Rattus rattus* – roof rat

* *Rattus norvegicus* – brown rat

CANIDAE – WOLVES AND FOXES

* *Canis lupus familiaris* – domestic dog

Canis latrans – coyote

PROCYONIDAE – RACCOONS AND RELATIVES

Procyon lotor – common raccoon

FELIDAE – CATS

* *Felis catus* – domestic cat

Lynx rufus – bobcat

PHOCIDAE – SEALS

Phoca vitulina – harbor seal

APPENDIX A (Continued)

WILDLIFE SPECIES – INVERTEBRATES

BUTTERFLIES AND MOTHS

PAPILIONIDAE – SWALLOWTAILS

Papilio rutulus – tiger swallowtail

PIERIDAE – WHITES AND SULFURS

Pieris rapae – European cabbage butterfly

LYCAENIDAE – BLUES, HAIRSTREAKS, AND COPPERS

Brephidium exile – western pygmy blue

Plebejus acmon – acmon blue

NYMPHALIDAE – BRUSH-FOOTED BUTTERFLIES

Adelpha bredowii – California sister

Danaus gilippus – queen

Nymphalis antiopa – mourning cloak

Vanessa annabella – west coast lady

CRUSTACEANS

ASTACOIDEA – CRAYFISH

* *Procambarus clarkii* – red swamp crayfish

* signifies introduced (non-native) species

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APPENDIX B

Willow Flycatcher Data Forms

Willow Flycatcher Survey and Detection Form (revised April, 2004)

Site Name MID-COAST TRANSIT PROJECT - SOUTH State CA County SAN DIEGO
 USGS Quad Name LA JOLLA, POINT LOMA Elevation _____ feet / meters (circle one)

Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? ☒ Yes ☐ No N/A

Site Coordinates: Start: N 481194.864154 E 3624480.5048 UTM Datum NAD27 (NAD27 preferred)
 Stop: N 478512.996453 E 3632135.30002 UTM Zone 11

**** Fill in additional site information on back of this page ****

Survey # Observer(s) (Full Name)	Date (m/d/y) Survey time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found ? Y or N	Cowbirds Detected? Y or N	Presence of Livestock, Recent sign, If Yes, Describe Y or N	Comments about this survey (e.g., bird behavior, evidence of pairs or breeding, number of nests, nest contents or number of fledges seen; potential threats)
1 <u>Paul LEMONS</u>	Date <u>5/24/10</u> Start <u>0700</u> Stop <u>1040</u> Total hrs <u>3.66</u>	0	0	0	N	Y	N	
2 <u>Brack Ortega</u>	Date <u>6/14/10</u> Start <u>0600</u> Stop <u>1000</u> Total hrs <u>4</u>	0	0	0	N	Y	N	
3 <u>Paul LEMONS</u>	Date <u>6/24/10</u> Start <u>0600</u> Stop <u>1015</u> Total hrs <u>4.25</u>	0	0	0	N	Y	N	
4 <u>Brack Ortega</u>	Date <u>7/6/10</u> Start <u>0530</u> Stop <u>1030</u> Total hrs <u>5</u>	0	0	0	N	Y	N	
5 <u>Paul LEMONS</u>	Date <u>7/16/10</u> Start <u>0700</u> Stop <u>1100</u> Total hrs <u>4.0</u>	0	0	0	N	N	N	
Overall Site Summary (Total resident WIFLs only)		Adults	Pairs	Territories	Nests	Were any WIFLs color-banded? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Total survey hrs <u>21</u>		0	0	0	0	If yes, report color combination(s) in the comments section on back of form		

Reporting Individuals PAUL LEMONS, BRACK ORTEGA Date Report Completed _____
 US Fish and Wildlife Service Permit # TE091248-4 AZ Game and Fish Department (or other state) Permit # N/A
TE913545

Submit original form by August 1st. Retain a copy for your records.

Fill in the following information completely. Submit original form by August 1st. Retain a copy for your records.

Reporting Individual PAUL LEMONS / BROCK ORTEGA Phone # 760-942-5147
Affiliation CONSULTANT E-mail plemons@dudek.com
Site Name MID-COAST TRANSIT PROJECT - SOUTH Date Report Completed _____

Did you verify that this site name is consistent with that used in previous years? Yes / No (circle one)

If name is different, what name(s) was used in the past? _____

If site was surveyed last year, did you survey the same general area this year? Yes / No If no, summarize in comments below.

Did you survey the same general area during each visit to this site this year? Yes / No If no, summarize in comments below.

Management Authority for Survey Area (circle one): Federal Municipal/County State Tribal Private

Name of Management Entity or Owner (e.g., Tonto National Forest) _____

Length of area surveyed: _____ (specify units, e.g., miles = mi, kilometers = km, meters = m)

Vegetation Characteristics: Overall, are the species in tree/shrub layer at this site comprised predominantly of (check one):

☐ Native broadleaf plants (entirely or almost entirely, includes high-elevation willow)

☒ Mixed native and exotic plants (mostly native)

☐ Mixed native and exotic plants (mostly exotic)

☐ Exotic/introduced plants (entirely or almost entirely)

Identify the 2-3 predominant tree/shrub species: Salix lasiolepis, Baccharis salicifolia, Toxicodendron diversilobum

Average height of canopy (Do not put a range): 15ft (specify units)

Was surface water or saturated soil present at or adjacent to site? Yes / No (circle one)

Distance from the site to surface water or saturated soil: _____ (specify units)

Did hydrological conditions change significantly among visits (did the site flood or dry out)? Yes / No (circle one)

If yes, describe in comments section below.

Remember to attach a copy of a USGS quad/topographical map (REQUIRED) of the survey area, outlining the survey site and location of WIFL detections. Also include a sketch or aerial photograph showing details of site location, patch shape, survey route in relation to patch, and location of any willow flycatchers or willow flycatcher nests detected. Such sketches or photographs are welcomed, but DO NOT substitute for the required USGS quad map. Please include photos of the interior of the patch, exterior of the patch, and overall site and describe any unique habitat features.

Comments (attach additional sheets if necessary)

WIFL Detection Locations:

Date Detected	N UTM	E UTM	Date Detected	N UTM	E UTM

Willow Flycatcher Survey and Detection Form (revised April, 2004)

Site Name MID COAST TRANSIT PROJECT - NORTH State CA County SAN DIEGO
 USGS Quad Name DEL MAR, LA JOLLA Elevation _____ feet / meters (circle one)

Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? ☒ Yes ☐ No N/A

Site Coordinates: Start: N 478512.996453 E 3632135.30002 UTM Datum NAD27 (NAD27 preferred)
 Stop: N 478217.344519 E 3634466.2461 UTM Zone 11

**** Fill in additional site information on back of this page ****

Survey # Observer(s) (Full Name)	Date (m/d/y) Survey time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found ? Y or N	Cowbirds Detected? Y or N	Presence of Livestock, Recent sign, If Yes, Describe Y or N	Comments about this survey (e.g., bird behavior, evidence of pairs or breeding, number of nests, nest contents or number of fledges seen; potential threats)
1 <u>Brock Ortega</u>	Date <u>5/24/10</u> Start <u>0530</u> Stop <u>1100</u> Total hrs <u>5.5</u>	0	0	0	N	Y	N	
2 <u>Brock Ortega</u>	Date <u>6/4/10</u> Start <u>0530</u> Stop <u>0915</u> Total hrs <u>3.75</u>	0	0	0	N	Y	N	
3 <u>Brock Ortega</u>	Date <u>6/24/10</u> Start <u>0500</u> Stop <u>1000</u> Total hrs <u>5</u>	0	0	0	N	Y	N	
4 <u>PAUL LEMONS</u>	Date <u>7/6/10</u> Start <u>0545</u> Stop <u>1130</u> Total hrs <u>5.75</u>	0	0	0	N	N	N	
5 <u>Brock Ortega</u>	Date <u>7/16/10</u> Start <u>0545</u> Stop <u>1100</u> Total hrs <u>5.25</u>	0	0	0	N	Y	N	
Overall Site Summary (Total resident WIFLs only)		Adults	Pairs	Territories	Nests	Were any WIFLs color-banded? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Total survey hrs <u>24.75</u>		0	0	0	0	If yes, report color combination(s) in the comments section on back of form		

Reporting Individual(s) PAUL LEMONS, BROCK ORTEGA Date Report Completed _____
 US Fish and Wildlife Service Permit # TE051248-4 AZ Game and Fish Department (or other state) Permit # N/A
TE013545

Submit original form by August 1st. Retain a copy for your records.

Fill in the following information completely. Submit original form by August 1st. Retain a copy for your records.

Reporting Individual PAUL LEMONS / Brock ORTEGA Phone # 760-942-5147
Affiliation CONSULTANT E-mail plemons@diduck.com
Site Name MID-COAST TRANSIT PROJECT - NORTH Date Report Completed _____

Did you verify that this site name is consistent with that used in previous years? Yes / No (circle one)

If name is different, what name(s) was used in the past? _____

If site was surveyed last year, did you survey the same general area this year? Yes / No If no, summarize in comments below.

Did you survey the same general area during each visit to this site this year? Yes / No If no, summarize in comments below.

Management Authority for Survey Area (circle one): Federal Municipal/County State Tribal Private

Name of Management Entity or Owner (e.g., Tonto National Forest) _____

Length of area surveyed: _____ (specify units, e.g., miles = mi, kilometers = km, meters = m)

Vegetation Characteristics: Overall, are the species in tree/shrub layer at this site comprised predominantly of (check one):

☐ Native broadleaf plants (entirely or almost entirely, includes high-elevation willow)

☒ Mixed native and exotic plants (mostly native)

☐ Mixed native and exotic plants (mostly exotic)

☐ Exotic/introduced plants (entirely or almost entirely)

Identify the 2-3 predominant tree/shrub species: Salix lasiolepis, Baccharis salicifolia, Toxicodendron diversilobum

Average height of canopy (Do not put a range): 15ft. (specify units)

Was surface water or saturated soil present at or adjacent to site? Yes No (circle one)

Distance from the site to surface water or saturated soil: _____ (specify units)

Did hydrological conditions change significantly among visits (did the site flood or dry out)? Yes No (circle one)

If yes, describe in comments section below.

Remember to attach a copy of a USGS quad/topographical map (REQUIRED) of the survey area, outlining the survey site and location of WIFL detections. Also include a sketch or aerial photograph showing details of site location, patch shape, survey route in relation to patch, and location of any willow flycatchers or willow flycatcher nests detected. Such sketches or photographs are welcomed, but DO NOT substitute for the required USGS quad map. Please include photos of the interior of the patch, exterior of the patch, and overall site and describe any unique habitat features.

Comments (attach additional sheets if necessary)

WIFL Detection Locations:

Date Detected	N UTM	E UTM	Date Detected	N UTM	E UTM



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**2011 Wet Season Presence/Absence Survey for Vernal Pool
Branchiopods,
Mid-Coast Corridor Transit Project,
San Diego County, California**



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October 10, 2011

6099-3-3

U.S. Fish and Wildlife Service
Attn: Recovery Permit Coordinator
6010 Hidden Valley Road
Carlsbad, California 92011

***Subject: 2011 Wet Season Presence/Absence Survey for Vernal Pool Branchiopods,
Mid-Coast Corridor Transit Project, San Diego County, California***

Dear Recovery Permit Coordinator:

This report is intended to fulfill reporting requirements in accordance with the Section 10(a)(1)(A) permit and documents the results of a wet season presence/absence survey for vernal pool branchiopods conducted for the Mid-Coast Corridor Transit Project (project), located in the City of San Diego, San Diego County, California. According to the U.S. Fish and Wildlife Service (USFWS) survey guidelines, a complete survey for vernal pool branchiopods consists of sampling for two full wet season surveys within a five-year period or two consecutive seasons of one wet season survey and one dry season survey. This report documents the first wet season survey for this project.

The 2011 survey was performed by Dudek Biologist, Thomas S. Liddicoat (Permit # TE139634-2) between March 1 and June 6, 2011. The survey focused on the determination of the presence/absence of two federally listed endangered vernal pool branchiopod species: Riverside fairy shrimp (*Streptocephalus woottoni*) and San Diego fairy shrimp (*Branchinecta sandiegonensis*) according to the April 19, 1996, *Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods*. The survey consisted of an inspection of all potential suitable habitat within the proposed project study area (i.e., approximately 1,672 acres) and sampling of all water-filled depressions within the survey area. A total of 42 suitable depressions were identified and surveyed during this 2011 wet season survey. Of the 42 depressions sampled, 7 depressions were found to be occupied with vernal pool branchiopods and all branchiopod individuals observed were identified as versatile fairy shrimp (*Branchinecta lindahli*). No listed special-status vernal pool branchiopods were observed on site.

PROJECT LOCATION AND EXISTING CONDITIONS

The 1,672-acre project study area (study area) is located in the western portion of the City of San Diego and extends from Old Town Transit Center (OTTC) north to the University City, San Diego County, California (Figure 1). The following communities are included in this area: University City, La Jolla, Clairemont Mesa, Pacific Beach, Mission Beach, Linda Vista, and Old Town. The project study area is bounded by the Pacific Ocean to the west, the I-5 and I-805 junction to the north, I-805 and SR-163 to the east, and OTTC and Mission Valley to the south. The proposed light rail transit (LRT) alternative alignments within the project study area generally run along I-5 from just south of I-8 at OTTC north to Genesee Avenue in University City, situated on the U.S. Geological Survey 7.5 minute Del Mar and La Jolla quadrangles, Township 15 South, Range 3 West, in Section 17 (Figure 2).

The study area consists of the existing railroad right-of-way (ROW); adjacent disturbed and developed lands; and native and non-native upland, riparian, and wetland vegetation communities. Soil series on site (Bowman 1973) include: Altamont, Carlsbad, Chesterton, Corralitos, Gaviota, Huerhuero, Lagoon water, Made land, Salinas, Terrace escarpments, and Urban land. Soils that are potentially suitable to support vernal pool type-scenarios (i.e., ephemeral ponding) are those series that predominantly contain clay particles and are not well draining such as: Altamont clay, Salinas clay loam, made land, and urban land complexes.

Land uses within and adjacent to the study area include suburban residential, commercial development, educational, designated open space, the Rose Canyon bike trail, and roads.

VEGETATION COMMUNITIES, BASINS, AND LAND COVER TYPES

The study area supports twenty-four vegetation communities (twenty native/naturalized and four non-native) and was mapped by Dudek biologists in July through August 2010. These communities are characterized by Holland (1986) and Oberbauer et al. (2008) and include: disturbed wetland, disturbed habitat, ornamental, urban/developed, Diegan coastal sage scrub (including disturbed), southern mixed chaparral, non-native grassland, cismontane alkali marsh, coastal and valley freshwater marsh (including disturbed), herbaceous wetland, southern riparian forest (including disturbed), southern coast live oak riparian, southern arroyo willow riparian forest, southern riparian scrub, mulefat scrub (including disturbed), southern willow scrub (including disturbed), arundo-dominated riparian, non-vegetated channel/floodway, and eucalyptus woodland.

Potentially suitable habitats for vernal pool branchiopods in the study area include: dirt areas in the existing ROW, within relatively flat (less than 10%) vegetation areas adjacent to the ROW, and within the dirt roads/trails that traverse the area to provide vehicular access to utilities (e.g., railroad, electrical poles, and sewer/storm water manholes). Descriptions of the potentially suitable vernal pool habitats (i.e., developed disturbed land, disturbed wetland, herbaceous wetland, and grassland communities) are described below.

Disturbed Land

Disturbed land refers to areas that typically lack native vegetation, support non-native vegetation, often contains bare ground, and is generally the result of severe or repeated mechanical perturbation. Within the study area disturbed land occurs throughout the study area, is generally associated with the existing rail ROW, and includes dirt access roads/trails that traverse the study area.

Disturbed Wetland

Disturbed wetlands are areas permanently or periodically inundated by water that have been severely modified by human activity. Disturbed wetlands are often unvegetated, but may include some scattered non-native vegetation such as giant reed (*Arundo donax*), tamarisk (*Tamarix* spp.), eucalyptus (*Eucalyptus* spp.), palms (*Phoenix* spp., *Washingtonia* spp.), pampas grass (*Cortaderia* spp.), and Bermuda grass. Native wetland species, such as willow (*Salix* spp.) and cattails (*Typha* spp.) may also occur. Disturbed wetlands occur throughout the study area within and adjacent to the existing rail ROW.

Herbaceous Wetland

Herbaceous wetland is not recognized by Holland (1986), but is included in Oberbauer et al. (2008). This community is a seasonal wetland that primarily supports annual species, such as seep monkey flower (*Mimulus guttatus*) and annual beard grass (*Polypogon monspeliensis*). Herbaceous wetlands occur in swale areas or along drainages. Herbaceous wetlands usually do not include species such as cattails, bulrushes, and rushes that constitute freshwater marsh. As a seasonal community in San Diego County, herbaceous wetland may only occur during wetter than average years. A few herbaceous wetlands occur in the study area adjacent to the existing rail ROW.

Non-Native Grasslands

According to Holland (1986), non-native grassland is characterized by a dense to sparse cover of annual grasses with flowering culms generally between 0.2 and 0.5 meter (0.7 and 1.6 feet) high, and sometimes up to 1 meter (3 feet) high. Some characteristic species include wild oat (*Avena* spp.),

bromes (*Bromus diandrus*, *B. madritensis*, *B. hordeaceus*), filaree (*Erodium* spp.), and fescue (*Vulpia* spp.). In addition, non-native grassland is often associated with numerous species of wildflowers. Non-native grassland typically occurs on fine-textured clay soils that are moist to waterlogged during the winter rainy season and very dry during the summer and fall (Holland 1986). The majority of non-native grassland on site occurs in the northeastern portion of the study area along Rose Canyon.

PREVIOUS BRANCHIOPOD STUDIES

To our knowledge, no focused surveys for vernal pool branchiopods have been conducted within the proposed project study area prior to this 2011 wet season presence/absence branchiopod survey. A general habitat assessment to evaluate the potential for vernal pool branchiopods within the study area was conducted by Dudek in early February 2011, prior to conducting field surveys. No surveys were conducted during the initial habitat assessment due to the observed depressions not meeting the federal inundation requirement for implementing wet surveys (i.e., holding water at minimum 3 cm depth for at least two weeks).

SURVEY METHODS

The survey methodology consisted of an initial field reconnaissance survey (conducted February 4, 2011) following rain events to detect areas of ponded water and follow-up traditional ground surveys. The entire project study area was surveyed on-foot to provide 100% visual coverage of the site (Figure 3).

Onset of significant rain events (i.e., greater than 0.20 inch) for the 2010/11 wet season began during the end of December (i.e., 17th–29th) 2010. Although the initial pooling for the 2010/11 wet season was not surveyed (depressions possibly inundated from the onset of rain events mentioned above), a reconnaissance field assessment to detect inundated depressions was performed on February 4, 2011, following the rains on January 31, 2011. During this initial field assessment all potentially suitable depressions were mapped and protocol level branchiopod sampling was performed where appropriate. Please note that no surveys were conducted during the initial assessment due to the observed depressions not meeting the federal inundation requirement for implementing wet surveys (i.e., holding water at minimum 3 cm depth for at least two weeks).

Protocol-level sampling for the 2010/11 wet season was initiated approximately two weeks following the significant rain event on February 16th. The site was visited approximately every two weeks, until all unoccupied basins were observed to be dried on April 29, 2011. Subsequent rains in mid-May commenced ground surveys which were observed to be dry on June 6, 2011. During the survey period the site was surveyed 7 times. A schedule of the survey season and site conditions are presented in Table 1.

Table 1
2010/11 Schedule of Surveys and Conditions

Visit Number	Date	Avg. Air Temp (°C)	Avg. Water Temp (°C)
1	March 1, 2011	18	22
2	March 18, 2011	19	23
3	April 1, 2011	24	25
4	April 15, 2011	25	28
5	April 29, 2011	NR	NR
6	May 23, 2011	19	23
7	June 6, 2011	NR	NR

NR – not recorded

The surveys were conducted by Dudek biologist, Thomas S. Liddicoat (Permit # TE139634-2). All identified basins within the study area were evaluated during each site visit to determine inundation levels and sampling was performed where appropriate. When subsequent rains occurred during the survey season, all of the basin areas were re-evaluated and protocol sampling was implemented where appropriate. Daily precipitation, as recorded by Weather Underground, was recorded for Clairemont, California (i.e., N. Clairemont weather station KCASANDI106) and is attached as Appendix A to this report (Weather Underground, 2010–11).

Protocol-level sampling was performed within all basins that were deemed suitable for use by fairy shrimp and any depressions meeting the USFWS inundation requirement (ponding at least 3 cm deep). The locations of detected basins sampled were recorded using a Global Positioning System (GPS) unit and were alphabetically labeled. GPS data was downloaded into an ArcGIS file and digitized by Dudek Geographic Information Specialist (GIS) Jeff Kubran.

During each survey all depressions were inspected for inundation depth, surface area of water, air and water temperature, level of disturbance, and presence of aquatic wildlife. An aquarium net was passed through every basin that met the USFWS inundation requirement. Nearly all portions of ponded water were surveyed from the bottom to the surface. Mr. Liddicoat is not familiar with all aquatic invertebrates, but is able to identify fairy shrimp, some aquatic invertebrates, and tadpoles where present.

All information was recorded in the field onto a data sheet as provided in the survey protocol with most pertinent information (e.g., inundation, fairy shrimp presence/absence, and species identification) recorded onto a spreadsheet Survey Log (Appendix B). Data sheets were completed for every depression which met the minimum inundation requirement at the time of sampling (Appendix C). Photographs of the basins sampled are attached to this report as Appendix D.

Samples were collected when needed using the aquarium net and a 40 milliliter glass vial. Specimens were stored in the vial with water collected from where the specimen was found. Specimens were taken into the laboratory within 24 hours of collection and placed in a 90% ethyl alcohol solution for preservation. Each specimen was inspected thoroughly using a microscope at 3× magnification and the key found in Eriksen and Belk (1999).

SURVEY RESULTS

Basin Descriptions

A total of 42 depressions were identified as suitable habitat for vernal pool branchiopods and sampled during the 2010/2011 wet survey season. The majority of depressions sampled were distributed randomly (i.e., not clustered in a particular area of the study site) in and adjacent to the existing railway ROW. The locations of the depressions are depicted on Figures 3a–j. The depressions detected on site were either: (1) road ruts: depressions that are typically formed by vehicular traffic within or immediately adjacent to roadways, generally lack aquatic vegetation, and are heavily disturbed by vehicular traffic; or (2) ephemeral basins: surface depressions that retain sufficient water level, support aquatic vegetation, and generally lack vehicle disturbance. Of the 42 depressions sampled, 27 were considered road ruts and 15 were considered ephemeral basins (12 of the ephemeral basins were heavily disturbed and did not support native vegetation).

Fairy Shrimp Presence/Absence

Seven of the forty-two depressions sampled in the study area were found to be occupied by vernal pool branchiopods and all individuals were identified as versatile fairy shrimp (*Branchinecta lindahli*). Specifically, the depressions with fairy shrimp include depressions: WW, XX, ZZ, H, I, J, and K. No special-status vernal pool branchiopods were detected during the surveys. A summary of the survey results is provided below in Table 2 and the full Survey Log is included to this report as Appendix B.

Table 2
2010/11 Vernal Pool Branchiopods Survey Results

Basin ID.	Branchiopod Species Observed
AA	None
BB	None
CC	None
DD	None
EE	None
FF	None

Table 2
2010/11 Vernal Pool Branchiopods Survey Results

Basin ID.	Branchiopod Species Observed
GG	None
HH	None
II	None
JJ	None
KK	None
LL	None
MM	None
NN	None
OO	None
PP	None
QQ	None
RR	None
SS	None
TT	None
UU	None
VV	None
WW	Fairy Shrimp Present; <i>Branchinecta lindahli</i> . Magnitude of individuals = 100's
XX	Fairy Shrimp Present; <i>Branchinecta lindahli</i> . Magnitude of individuals = 10's
YY	None
ZZ	Fairy Shrimp Present; <i>Branchinecta lindahli</i> . Magnitude of individuals = 10's
A	None
B	None
C	None
D	None
E	None
F	None
G	None
H	Fairy Shrimp Present; <i>Branchinecta lindahli</i> . Magnitude of individuals = 100's
I	Fairy Shrimp Present; <i>Branchinecta lindahli</i> . Magnitude of individuals = 10's
J	Fairy Shrimp Present; <i>Branchinecta lindahli</i> . Magnitude of individuals = 100's
K	Fairy Shrimp Present; <i>Branchinecta lindahli</i> . Magnitude of individuals = 10's
L	None
M	None
N	None
O	None
P	None

Recovery Permit Coordinator

Subject: 2011 Wet Season Presence/Absence Survey for Vernal Pool Branchiopods, Mid-Coast Corridor Transit Project, County of San Diego, California

Protocol-level sampling for the 2010/11 wet season was initiated approximately two weeks following the significant rain event on February 16, 2011. During this first sampling effort (March 1, 2011) 41 depressions were detected suitable for sampling; of which 7 yielded positive results for branchiopods. Although a few minor rain events occurred between the first visit and the second visit (March 18, 2011), there was a drastic reduction in the number of inundated depressions and only 14 depressions were sampled of the 41 initially detected (not including the 7 already determined positive from the first sampling visit) with no branchiopods detected.

During the third sampling visit on April 1, 2011, a total of 7 depressions were sampled with no branchiopods detected. A few rain events occurred between the third and fourth visit (April 15, 2011) resulting in 5 depressions sampled with no branchiopods detected. With the increase in air temperatures and continued lack of significant precipitation in the study area, all previously sampled depressions were dry during the fifth visit on April 29, 2011, consequently ending the surveys until subsequent precipitation events.

Significant rain storms in mid-May commenced ground surveys in which 3 depressions were sampled during the sixth visit on May 23, 2011, with no branchiopods detected. A new road rut type of depression was detected during the sixth visit increasing the total of depressions in the study area to 42. All depressions were observed dry during the seventh and final visit on June 6, 2011.

I certify that the information presented in this survey report and attached exhibits fully and accurately represents my work.

Please feel free to contact Kam Muri or myself at 760.942.5147 if you have any questions regarding the contents of this report.

Sincerely, .



Thomas S. Liddicoat, Biologist
Permit # TE139634-2

*Att: Figure 1, Regional Map
Figure 2, Vicinity Map
Figure 3, Survey Area Index
Figures 3A–3J, Basin Locations
Appendix A – Precipitation Log
Appendix B – Survey Log
Appendix C – Survey Data Forms
Appendix D – Photo Exhibits*

*cc: Kamarul Muri, Dudek
Brock Ortega, Dudek*

Recovery Permit Coordinator

Subject: 2011 Wet Season Presence/Absence Survey for Vernal Pool Branchiopods, Mid-Coast Corridor Transit Project, County of San Diego, California

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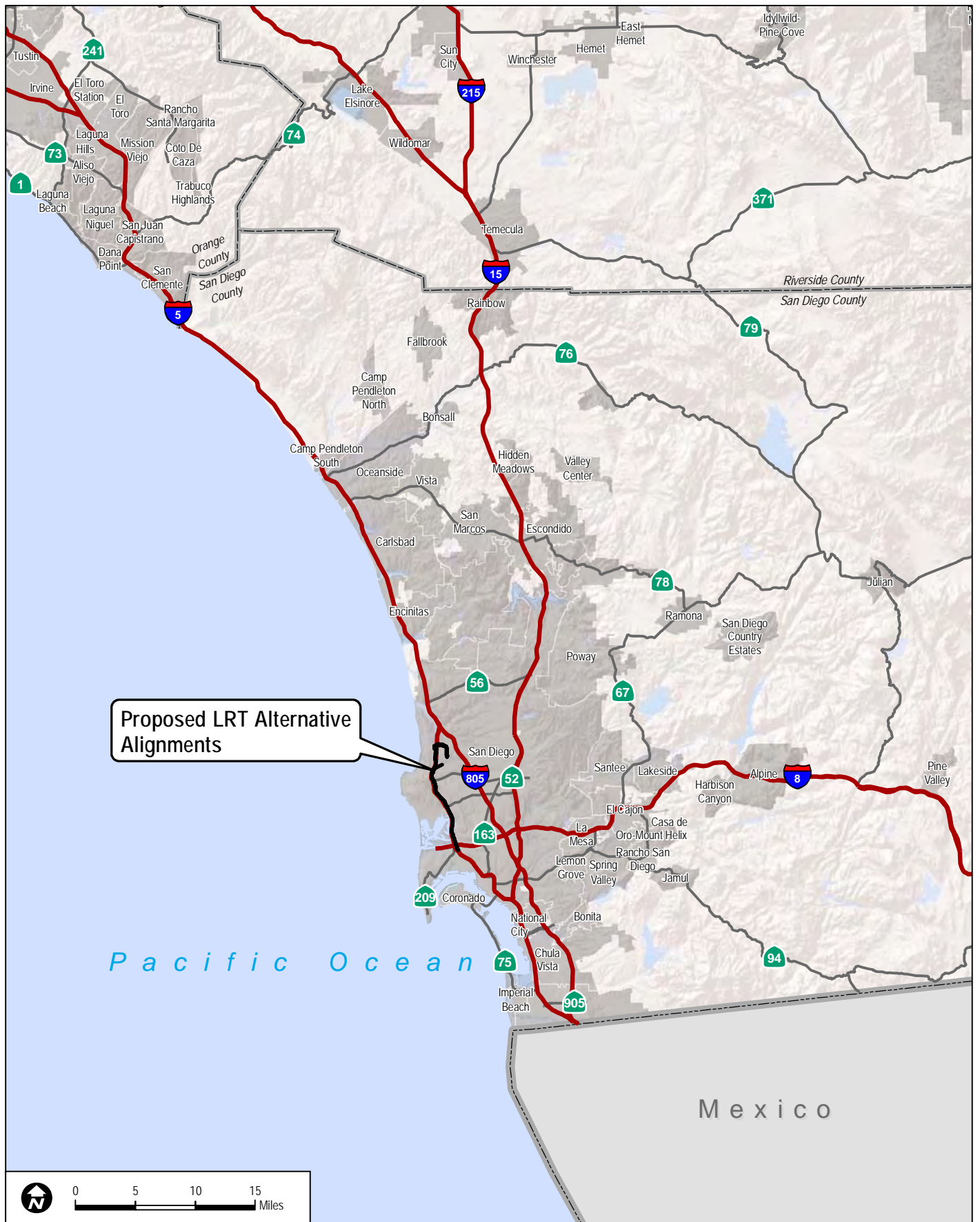


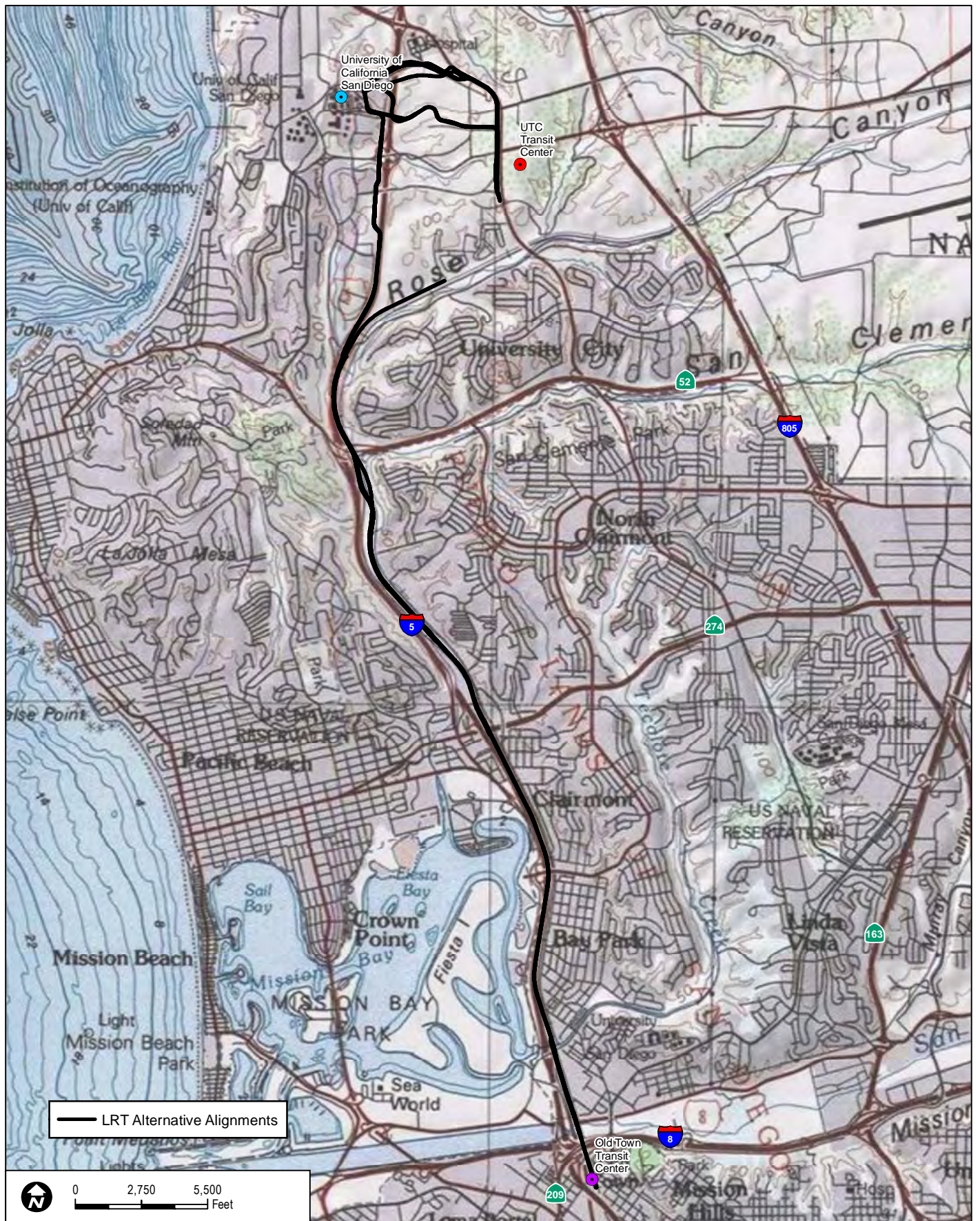
FIGURE 1
Regional Map

SOURCE: SanGIS 2008.

Mid-Coast Corridor Transit Project - Wet Season Presence/Absence Survey for Vernal Pool Branchiopods

DUDEK

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SOURCE: USGS 7.5 Minute Series Del Mar and La Jolla Quadrangles.

FIGURE 2
Vicinity Map

Mid-Coast Corridor Transit Project - Wet Season Presence/Absence Survey for Vernal Pool Branchiopods

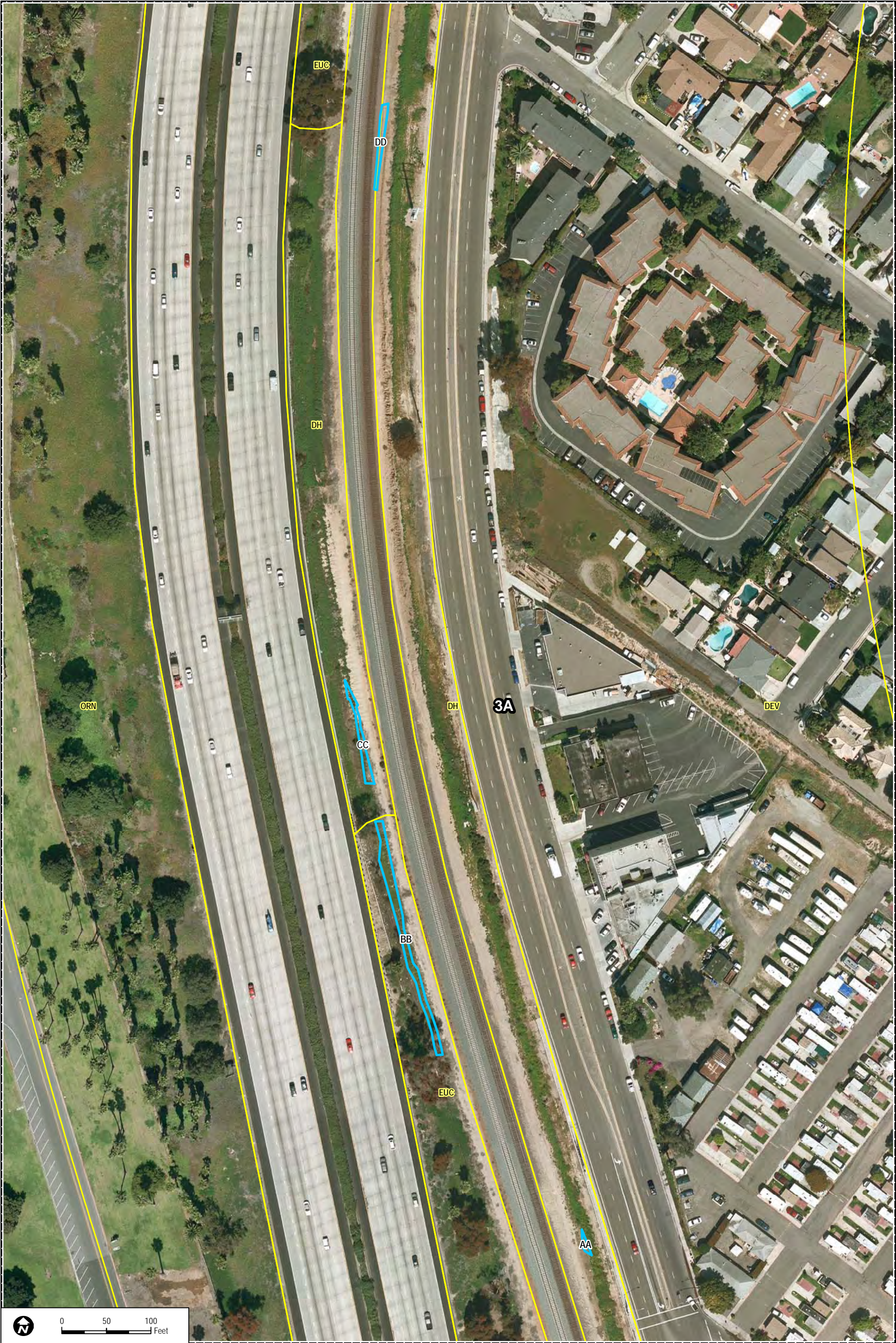
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DUDEK

AERIAL SOURCE: UCSD 2010.



Basin Location



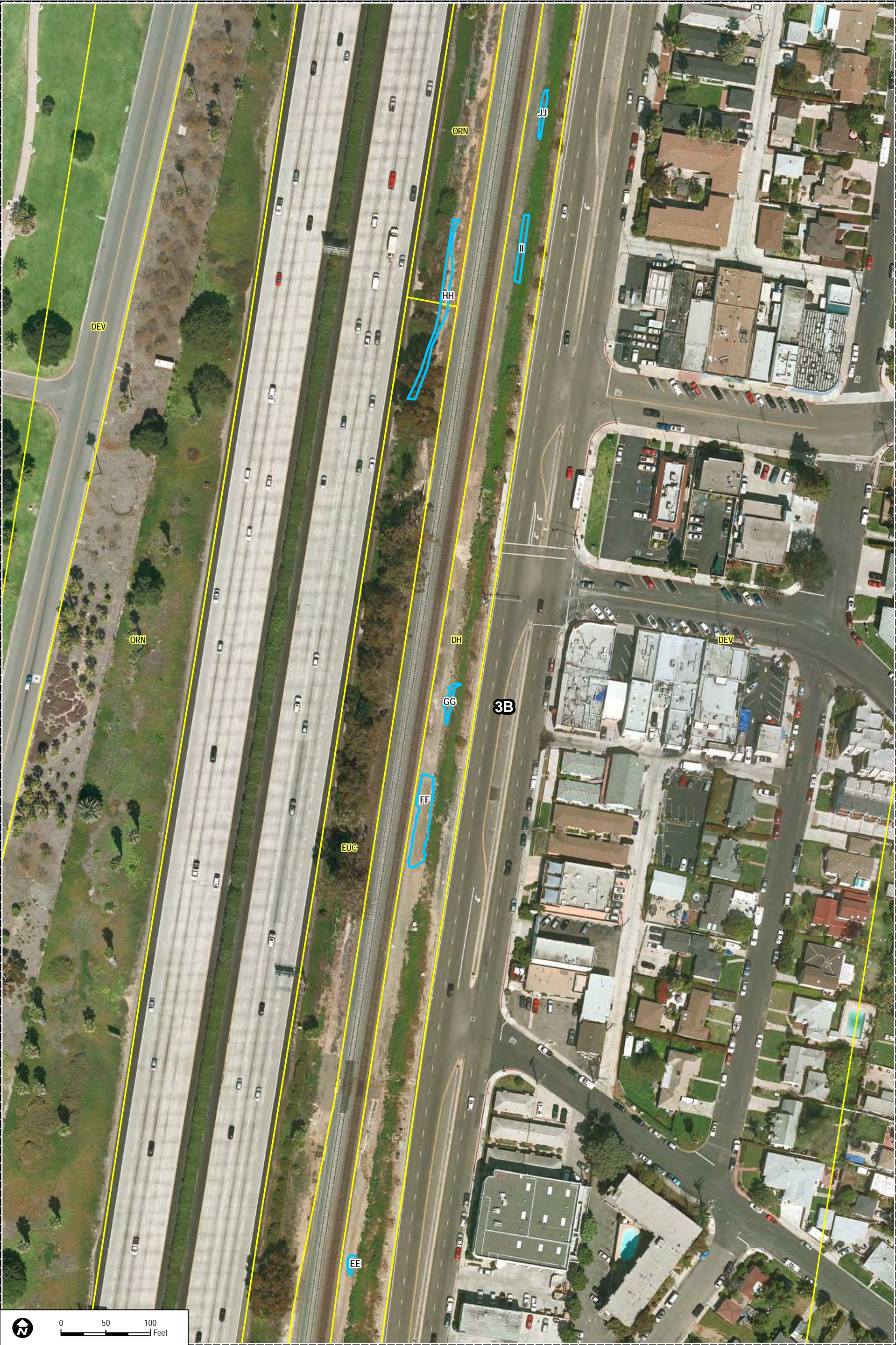
Map Grid



Vegetation (See Index Map for Vegetation Codes)

FIGURE 3A
Basin Locations

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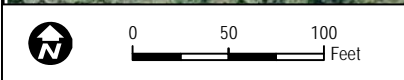
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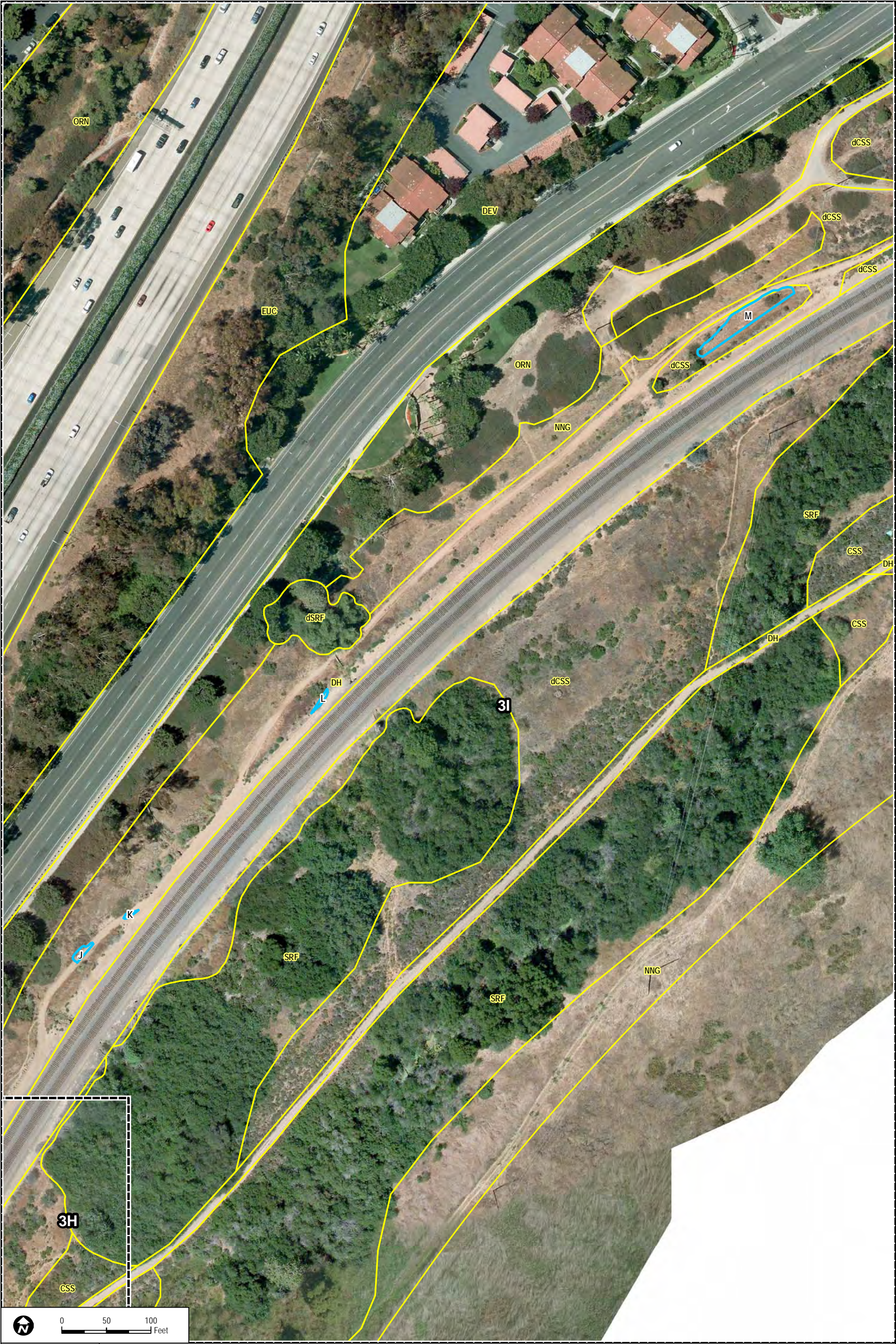
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DUDEK

AERIAL SOURCE: UCSD 2010.

Basin Location

Map Grid

Vegetation (See Index Map for Vegetation Codes)

FIGURE 3J
Basin Locations

6099-03-3

Mid-Coast Corridor Transit Project - Wet Season Presence/Absence Survey for Vernal Pool Branchiopods

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APPENDIX A

Precipitation Log

2010/11 Wet Season FS Precipitation Log

2010	Temp. (°F)			Precip (in)
Nov	high	avg	low	sum
1	72	64	58	0
2	86	74	65	0
3	90	78	67	0
4	97	80	65	0
5	88	72	62	0
6	73	61	53	0
7	67	61	57	0
8	64	56	49	0
9	65	56	48	0
10	66	57	50	0
11	69	61	52	0
12	74	60	51	0
13	74	60	51	0
14	78	60	53	0
15	70	57	49	0
16	65	56	55	0
17	64	57	52	0.01
18	63	57	55	0.01
19	59	58	57	0
20	59	56	55	0.23
21	58	53	50	0.22
22	58	53	48	0
23	60	52	43	0
24	58	51	44	0.05
25	60	49	40	0
26	65	50	38	0
27	62	51	40	0.08
28	56	53	43	0
29	60	48	37	0
30	63	50	38	0
2010	Temp. (°F)			Precip (in)
Dec	high	avg	low	sum
1	66	53	42	0
2	73	56	46	0
3	70	54	45	0
4	64	54	46	0
5	73	57	46	0.01
6	62	55	51	0
7	68	56	46	0.01
8	73	56	45	0
9	67	55	44	0.01
10	59	52	46	0.01
11	71	59	47	0.01
12	83	68	58	0

2010/11 Wet Season FS Precipitation Log

2010	Temp. (°F)			Precip (in)
Nov	high	avg	low	sum
13	83	64	50	0
14	60	54	51	0
15	61	56	53	0
16	60	53	49	0.03
17	61	55	47	0.28
18	60	58	56	0.08
19	58	57	56	0.5
20	60	58	53	0.94
21	58	56	53	2.47
22	60	55	51	1.53
23	60	54	47	0.02
24	63	52	45	0.01
25	61	53	45	0.2
26	58	54	49	0.2
27	61	52	44	0
28	65	54	44	0.01
29	56	53	51	0.86
30	53	48	41	0
31	55	46	37	0
2011	Temp. (°F)			Precip (in)
Jan	high	avg	low	sum
1	59	48	39	0
2	59	49	39	0.55
3	57	53	49	0.42
4	64	52	43	0.01
5	69	53	43	0
6	70	55	45	0
7	60	52	46	0
8	58	51	44	0.01
9	60	52	46	0
10	59	51	44	0
11	70	54	43	0
12	69	56	47	0
13	68	57	47	0
14	76	60	49	0
15	77	63	52	0
16	80	63	53	0
17	85	65	54	0
18	79	64	56	0
19	57	55	50	0
20	72	59	49	0
21	75	57	43	0
22	68	56	48	0
23	76	60	47	0

2010/11 Wet Season FS Precipitation Log

2010	Temp. (°F)			Precip (in)
Nov	high	avg	low	sum
24	70	56	46	0
25	72	58	47	0
26	76	61	46	0
27	77	61	49	0
28	76	58	47	0
29	66	54	45	0
30	61	55	53	0.05
31	62	55	49	0.02
2011	Temp. (°F)			Precip (in)
Feb	high	avg	low	sum
1	61	52	44	0.01
2	58	51	45	0
3	58	50	44	0
4	62	50	39	0
5	66	53	44	0
6	72	58	46	0.01
7	78	62	51	0
8	60	55	50	0
9	69	55	42	0
10	69	55	44	0
11	70	55	41	0
12	75	60	47	0
13	70	52	46	0
14	63	54	46	0
15	65	56	46	0
16	59	54	49	0.57
17	58	52	45	0
18	64	54	48	0.63
19	58	52	47	0.33
20	56	50	43	0
21	58	49	41	0
22	60	50	41	0
23	60	53	46	0
24	60	54	49	0
25	58	53	50	0
26	53	48	41	1.21
27	55	46	36	0.09
28	64	50	39	0
2011	Temp. (°F)			Precip (in)
Mar	high	avg	low	sum
1	62	51	41	0
2	62	53	43	0
3	64	57	51	0
4	63	57	52	0

2010/11 Wet Season FS Precipitation Log

2010	Temp. (°F)			Precip (in)
Nov	high	avg	low	sum
5	77	62	51	0
6	63	54	50	0
7	57	53	50	0.2
8	63	54	46	0
9	76	61	48	0
10	75	60	51	0
11	69	57	47	0.01
12	63	56	52	0
13	63	57	52	0
14	61	57	54	0
15	71	58	50	0.01
16	69	57	50	0.01
17	65	56	50	0
18	64	54	45	0.01
19	63	54	46	0
20	59	55	50	0.82
21	60	52	48	0.29
22	58	52	47	0.02
23	64	52	42	0.26
24	61	53	46	0.01
25	61	53	48	0.16
26	60	53	46	0
27	64	56	52	0
28	60	55	50	0
29	63	56	51	0
30	74	60	49	0.01
31	83	68	55	0
2011	Temp. (°F)			Precip (in)
Apr	high	avg	low	sum
1	87	64	46	0.18
2	68	60	57	0
3	67	59	52	0
4	69	60	51	0
5	68	59	54	0
6	65	59	56	0
7	60	56	52	0.02
8	57	51	45	0.04
9	57	50	41	0.1
10	64	54	43	0
11	64	56	48	0
12	65	57	50	0
13	62	56	51	0
14	66	57	47	0
15	76	63	51	0

2010/11 Wet Season FS Precipitation Log

2010	Temp. (°F)			Precip (in)
Nov	high	avg	low	sum
16	84	68	55	0
17	68	60	55	0.01
18	65	59	56	0
19	64	58	56	0
20	62	59	56	0.01
21	66	60	56	0
22	66	59	54	0
23	66	60	54	0
24	69	59	55	0.03
25	65	59	51	0
26	59	58	56	0
29	66	60	55	0
30	71	61	50	0
2011	Temp. (°F)			Precip (in)
May	high	avg	low	sum
1	78	66	51	0
2	87	71	56	0
3	90	71	56	0
4	83	68	55	0
5	75	62	55	0.01
6	69	61	55	0
7	66	60	56	0
8	64	58	54	0.02
9	63	57	54	0
10	67	58	49	0
11	66	59	52	0
12	66	61	56	0
13	70	59	55	0
14	65	59	55	0
15	63	58	54	0
16	62	57	51	0
17	62	56	53	0.31
18	61	57	51	0.38

APPENDIX B

Survey Log

2010/11 Wet Season FS Survey Log -- Mid Coast Transit

Survey Date	3/1/2011			3/18/2011			4/1/2011			4/15/2011			4/29/2011			5/23/2011			6/6/2011		
Basin ID	Wet/Dry	FS (N/Y)?	Notes	Wet/Dry	FS?	Notes	Wet/Dry	FS?	Notes	Wet/Dry	FS?	Notes	Wet/Dry	FS?	Notes	Wet/Dry	FS?	Notes	Wet/Dry	FS?	Notes
AA	Wet	None		Dry			Dry			Dry			Dry			Dry			Dry		
BB	Wet	None		Wet	None		Wet	None		Wet	None		Dry			Dry			Dry		
CC	Wet	None		Wet	None		Dry			Dry			Dry			Dry			Dry		
DD	Wet	None		Wet	None		Dry			Dry			Dry			Dry			Dry		
EE	Wet	None		Dry			Dry			Dry			Dry			Dry			Dry		
FF	Wet	None		Wet	None		Dry			Dry			Dry			Dry			Dry		
GG	Wet	None		Dry			Dry			Dry			Dry			Dry			Dry		
HH	Wet	None		Wet	None		Wet	None		Wet	None		Dry			Wet	None		Dry		
II	Wet	None		Dry			Dry			Dry			Dry			Dry			Dry		
JJ	Wet	None		Dry			Dry			Dry			Dry			Dry			Dry		
KK	Wet	None		Dry			Dry			Dry			Dry			Dry			Dry		
LL	Wet	None		Dry			Dry			Dry			Dry			Dry			Dry		
MM	Wet	None		Dry			Dry			Dry			Dry			Dry			Dry		
NN	Wet	None		Dry			Dry			Dry			Dry			Dry			Dry		
OO	Wet	None		Dry			Dry			Dry			Dry			Dry			Dry		
PP	Wet	None		Wet	None		Dry			Dry			Dry			Dry			Dry		
QQ	Wet	None		Dry			Dry			Dry			Dry			Dry			Dry		
RR	Wet	None		Wet	None		Dry			Dry			Dry			Dry			Dry		
SS	Wet	None		Dry			Dry			Dry			Dry			Dry			Dry		
TT	Wet	None		Dry			Dry			Dry			Dry			Dry			Dry		
UU	Wet	None		Dry			Dry			Dry			Dry			Dry			Dry		
VV	Wet	None		Dry			Dry			Dry			Dry			Dry			Dry		
WW	Wet	FS! 100's; 7male, 1female; B. Lindahli		Wet	Present		Dry			Dry			Dry			Dry			Dry		
XX	Wet	FS! 10's; 4male; B. Lindahli		Wet	Present		Wet	None		Dry			Dry			Dry			Dry		
YY	Wet	None		Dry			Dry			Dry			Dry			Dry			Dry		
ZZ	Wet	FS! 10's; 2male; B. Lindahli		Dry			Dry			Dry			Dry			Dry			Dry		
A	Wet	None		Wet	None		Dry			Dry			Dry			Dry			Dry		
B	Wet	None		Wet	None		Dry			Dry			Dry			Dry			Dry		
C	Wet	None		Wet	None		Wet	None		Dry			Dry			Wet	None		Dry		
D	Wet	None		Wet	None		Dry			Dry			Dry			Dry			Dry		
E	Wet	None		Wet	None		Wet	None		Wet	None		Dry			Wet	None		Dry		
F	Wet	None		Dry			Dry			Dry			Dry			Dry			Dry		
G	Wet	None		Dry			Dry			Dry			Dry			Dry			Dry		
H	Wet	FS! 100's; 6male; B. Lindahli		Dry			Dry			Dry			Dry			Dry			Dry		
I	Wet	FS! 10's; no sample, assume B. Lindahli		Dry			Dry			Dry			Dry			Dry			Dry		
J	Wet	FS! 100's; 5male, 1female; B. Lindahli		Dry			Dry			Dry			Dry			Dry			Dry		
K	Wet	FS! 10's; 4male, 1 female; B. Lindahli		Dry			Dry			Dry			Dry			Dry			Dry		
L	Wet	None		Dry			Dry			Dry			Dry			Dry			Dry		
M	Wet	None		Wet	None		Wet	None		Wet	None		Dry			Dry			Dry		
N	Wet	None		Wet	None		Wet	None		Wet	None		Dry			Dry			Dry		
O	Wet	None		Dry			Wet	None		Dry			Dry			Dry			Dry		
P	Dry			Dry			Dry			Dry			Dry			Wet			Dry		

APPENDIX C

Survey Data Forms

***Survey Data Forms were provided to the U.S. Fish
and Wildlife Service on October 10, 2011 and are
available upon request***

APPENDIX D

Photo Exhibits

APPENDIX D

Photo Exhibits



Photo Exhibit 1
Basin AA - Photo taken 3/1/11



Photo Exhibit 2
Basin BB – Photo taken 3/1/11

Appendix D



Photo Exhibit 3
Basin CC – Photo taken 3/1/11



Photo Exhibit 4
Basin DD – Photo taken 3/1/11

Appendix D



Photo Exhibit 5
Basin EE – Photo taken 3/1/11



Photo Exhibit 6
Basin FF – Photo taken 3/1/11

Appendix D



Photo Exhibit 7
Basin GG – Photo taken 3/1/11



Photo Exhibit 8
Basin HH – Photo taken 3/1/11

Appendix D



Photo Exhibit 9
Basin II – Photo taken 3/1/11



Photo Exhibit 10
Basin JJ – Photo taken 3/1/11

Appendix D



Photo Exhibit 11
Basin KK – Photo taken 3/1/11



Photo Exhibit 12
Basin LL – Photo taken 3/1/11

Appendix D



Photo Exhibit 13
Basin MM – Photo taken 3/1/11



Photo Exhibit 14
Basin NN – Photo taken 3/1/11

Appendix D



Photo Exhibit 15
Basin OO – Photo taken 3/1/11



Photo Exhibit 16
Basin PP – Photo taken 3/1/11

Appendix D



Photo Exhibit 17
Basin QQ – Photo taken 3/1/11



Photo Exhibit 18
Basin RR – Photo taken 3/1/11

Appendix D



Photo Exhibit 19
Basins SS and TT – Photo taken 3/1/11



Photo Exhibit 20
Basin UU - Photo taken 3/1/11

Appendix D



Photo Exhibit 21
Basin VV – Photo taken 3/1/11



Photo Exhibit 22
Basins WW and XX – Photo taken 3/1/11

Appendix D



Photo Exhibit 23
Basin YY – Photo taken 3/1/11



Photo Exhibit 24
Basin ZZ – Photo taken 3/1/11

Appendix D



Photo Exhibit 25
Basin A – Photo taken 3/1/11



Photo Exhibit 26
Basin B – Photo taken 3/1/11

Appendix D



Photo Exhibit 27
Basin C – Photo taken 3/1/11



Photo Exhibit 28
Basin D – Photo taken 3/3/11

Appendix D



Photo Exhibit 29
Basin E – Photo taken 3/3/11



Photo Exhibit 30
Basin F – Photo taken 3/3/11

Appendix D



Photo Exhibit 31
Basin G – Photo taken 3/3/11



Photo Exhibit 32
Basin H – Photo taken 3/3/11

Appendix D



Photo Exhibit 33
Basin I – Photo taken 3/3/11



Photo Exhibit 34
Basin J – Photo taken 3/3/11

Appendix D



Photo Exhibit 35
Basin K – Photo taken 3/3/11



Photo Exhibit 36
Basin L – Photo taken 3/3/11

Appendix D



Photo Exhibit 37
Basin M – Photo taken 3/3/11



Photo Exhibit 38
Basin N – Photo taken 3/3/11

Appendix D



Photo Exhibit 39
Basin O – Photo taken 3/3/11



Photo Exhibit 40
Basin P – Photo taken 5/23/11

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**2012 Wet Season Presence/Absence Survey for Vernal Pool
Branchiopods,
Mid-Coast Corridor Transit Project,
San Diego County, California**



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October 4, 2012

6099-3-3

U.S. Fish and Wildlife Service
Attn: Recovery Permit Coordinator
6010 Hidden Valley Road
Carlsbad, California 92011

***Subject: 2012 Wet Season Presence/Absence Survey for Vernal Pool Branchiopods,
Mid-Coast Corridor Transit Project, San Diego County, California***

Dear Recovery Permit Coordinator:

This report is intended to fulfill reporting requirements in accordance with the Section 10(a)(1)(A) permit and documents the results of a wet season presence/absence survey for vernal pool branchiopods conducted for the Mid-Coast Corridor Transit Project (project), located in the City of San Diego, San Diego County, California. According to the U.S. Fish and Wildlife Service (FWS) survey guidelines, a complete survey for vernal pool branchiopods consists of sampling for two full wet season surveys within a five-year period or two consecutive seasons of one wet season survey and one dry season survey. This report documents the second wet season survey for this project.

The 2012 survey was performed by Dudek biologists Paul Lemons (Permit # TE051248) and Thomas Liddicoat (Permit # TE139634) between November 17, 2011 and July 23, 2012. The survey focused on the determination of the presence/absence of two federally listed endangered vernal pool branchiopod species, Riverside fairy shrimp (*Streptocephalus woottoni*) and San Diego fairy shrimp (*Branchinecta sandiegonensis*), and was conducted according to the *Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods* (FWS, 1996). The survey consisted of an inspection of all potential suitable habitat within the survey area, defined as the area within approximately 100 feet of the proposed project, and sampling of all water-filled depressions within the survey area. A total of 54 suitable depressions were identified and surveyed during this 2012 wet season survey. Of the 54 depressions sampled, nine depressions were found to be occupied with vernal pool branchiopods. San Diego fairy shrimp were identified in one depression. Versatile fairy shrimp (*Branchinecta lynchi*) were identified in the eight other occupied depressions within the survey area.

PROJECT LOCATION AND EXISTING CONDITIONS

The study area is located in the western portion of the City of San Diego and extends from the Old Town Transit Center (OTTC) north to University City, San Diego County, California (Figure 1). The study area is generally bounded by the Pacific Ocean to the west, the Interstate (I-) 5/I-805 junction to the north, I-805 and State Route 163 to the east, and the OTTC and Mission Valley to the south. The proposed alignment of the Build Alternative within the study area generally runs along the east side of I-5 from just south of I-8 at the OTTC north to University City, through the University of California, San Diego campus, and along Genesee Avenue (Figure 2). The survey area is situated on the U.S. Geological Survey 7.5 minute La Jolla quadrangle, Township 15 South, Range 3 West, in Sections 19, 30, and 31, and Township 16 South, Range 3 West, in Sections 5, 6, 8, 9, 16, 17, 20, 21, and 28.

The survey area consists of the existing railroad right-of-way; adjacent disturbed and developed lands; and native and non-native upland, riparian, and wetland vegetation communities. Soil series on site (Bowman, 1973) include: Altamont, Carlsbad, Chesterton, Corralitos, Gaviota, Huerhuero, Lagoon water, Made land, Salinas, Terrace escarpments, and Urban land. Soils that are potentially suitable to support vernal pool type-scenarios (i.e., ephemeral ponding) are those series that predominantly contain clay particles and are not well draining such as: Altamont clay, Salinas clay loam, Made land, and Urban land complexes.

Land uses within and adjacent to the survey area include single-family and multifamily residential, commercial, light industrial, park, and transportation uses.

VEGETATION COMMUNITIES, BASINS, AND LAND COVER TYPES

The study area supports twenty-four vegetation communities (twenty native/naturalized and four non-native communities) and was mapped by Dudek biologists in July through August 2010. These communities are characterized by Holland (1986) and Oberbauer et al. (2008) and include: disturbed wetland, disturbed habitat, ornamental, urban/developed, Diegan coastal sage scrub (including disturbed), southern mixed chaparral, non-native grassland, cismontane alkali marsh, coastal and valley freshwater marsh (including disturbed), herbaceous wetland, southern riparian forest (including disturbed), southern coast live oak riparian, southern arroyo willow riparian forest, southern riparian scrub, mulefat scrub (including disturbed), southern willow scrub (including disturbed), arundo-dominated riparian, non-vegetated channel/floodway, and eucalyptus woodland.

Potentially suitable habitats for vernal pool branchiopods in the survey area include: dirt areas in the existing right-of-way, relatively flat (less than 10 percent slope) vegetation areas adjacent to

the right-of-way, and dirt roads/trails that traverse the area to provide vehicular access to utilities (e.g., railroad, electrical poles, and sewer/storm water manholes). Descriptions of the potentially suitable vernal pool habitats (i.e., developed disturbed land, disturbed wetland, herbaceous wetland, and grassland communities) are described below.

Disturbed Land

Disturbed land refers to areas that typically lack native vegetation, support non-native vegetation, often contains bare ground, and is generally the result of severe or repeated mechanical perturbation. Disturbed land occurs throughout the survey area, is generally associated with the existing rail right-of-way, and includes dirt access roads/trails that traverse the survey area.

Disturbed Wetland

Disturbed wetlands are areas permanently or periodically inundated by water that have been severely modified by human activity. Disturbed wetlands are often unvegetated, but may include some scattered non-native vegetation such as giant reed (*Arundo donax*), tamarisk (*Tamarix* spp.), eucalyptus (*Eucalyptus* spp.), palms (*Phoenix* spp., *Washingtonia* spp.), pampas grass (*Cortaderia* spp.), and Bermuda grass. Native wetland species, such as willow (*Salix* spp.) and cattails (*Typha* spp.) also may occur. Disturbed wetlands occur throughout the survey area within and adjacent to the existing rail right-of-way.

Herbaceous Wetland

Herbaceous wetland is not recognized by Holland (1986), but is included in Oberbauer et al. (2008). This community is a seasonal wetland that primarily supports annual species, such as seep monkey flower (*Mimulus guttatus*) and annual beard grass (*Polypogon monspeliensis*). Herbaceous wetlands occur in swale areas or along drainages. Herbaceous wetlands usually do not include species such as cattails, bulrushes, and rushes that constitute freshwater marsh. As a seasonal community in San Diego County, herbaceous wetland may only occur during wetter than average years. A few herbaceous wetlands occur in the survey area adjacent to the existing rail right-of-way.

Non-Native Grasslands

According to Holland (1986), non-native grassland is characterized by a dense to sparse cover of annual grasses with flowering culms generally between 0.2 and 0.5 meter (0.7 and 1.6 feet) high, and sometimes up to 1 meter (3 feet) high. Some characteristic species include wild oat (*Avena* spp.), bromes (*Bromus diandrus*, *B. madritensis*, *B. hordeaceus*), filaree (*Erodium* spp.), and fescue (*Vulpia*

spp.). In addition, non-native grassland is often associated with numerous species of wildflowers. Non-native grassland typically occurs on fine-textured clay soils that are moist to waterlogged during the winter rainy season and very dry during the summer and fall (Holland, 1986). The majority of non-native grassland on site occurs in the northeastern portion of the survey area along Rose Canyon.

PREVIOUS BRANCHIOPOD STUDIES

Dudek conducted wet season presence/absence surveys for vernal pool branchiopods within the survey area in early 2011. A general habitat assessment to evaluate the potential for vernal pool branchiopods within the survey area was conducted by Dudek in February 2011 prior to conducting protocol-level surveys. To our knowledge, no focused surveys for vernal pool branchiopods have been conducted within the survey area prior to the 2011 wet season survey.

SURVEY METHODS

The entire survey area was evaluated on-foot to provide 100 percent visual coverage of the site (Figure 3). Onset of significant rain events (i.e., greater than 0.20 inch) for the 2011/12 wet season began on November 12, 2011, thus wet season surveys commenced on November 17 and 18, 2011. During this initial survey, all potentially suitable depressions were mapped (or confirmed from previous mapping) and protocol level branchiopod sampling was performed.

All inundated basins were surveyed at approximately 2-week intervals until basins dried up or until 120 days elapsed. Basins that dried up, then refilled were surveyed within 7 days of refilling and surveys were re-initiated. During the 2011/12 wet season survey, the project was surveyed 21 times. A schedule of the survey season is presented in Table 1.

Table 1
2011/12 Schedule of Surveys and Conditions

Survey Number	Biologist	Date
1	TSL	November 17 and 18, 2011
2	TSL	November 30 and December 1, 2011
3	PML	December 14 and 19, 2011
4	PML	December 28, 2011
5	PML	January 11, 2012
6	PML	January 19, 2012
7	PML	January 27, 2012
8	PML	February 10, 2012
9	PML	February 22, 2012
10	PML	March 5, 2012

Table 1
2011/12 Schedule of Surveys and Conditions

Survey Number	Biologist	Date
11	PML	March 16, 2012
12	PML	March 26, 2012
13	TSL	April 3, 2012
14	PML	April 20, 2012
15	PML	May 2, 2012
16	PML	May 16, 2012
17	PML	May 30, 2012
18	PML	June 12, 2012
19	PML	June 26, 2012
20	PML	July 9, 2012
21	PML	July 23, 2012

Source: Dudek, 2012

The surveys were conducted by Dudek biologists Paul Lemons (PML; Permit # TE051248) and Thomas Liddicoat (TSL; Permit # TE139634). All identified basins within the survey area were evaluated during each site visit to determine inundation levels and sampling was performed where appropriate. Daily precipitation was monitored for weather station KCASANDI106 in Clairemont, California (Weather Underground Inc., 2011-2012).

Protocol-level sampling was performed within all basins that were deemed suitable for use by fairy shrimp and any depressions meeting the FWS inundation requirement (ponding at least 3 centimeters deep). The locations of detected basins sampled were recorded using a Global Positioning System (GPS) unit and were alphabetically labeled (Figure 3A to Figure 3I). GPS data were downloaded into an ArcGIS file and digitized by Dudek Geographic Information Systems (GIS) specialist Jeff Kubran.

During each survey all depressions were inspected for depth, surface area of water, air and water temperature, level of disturbance, and presence of aquatic wildlife. An aquarium net was passed through every basin that met the FWS inundation requirement. All portions of ponded water were surveyed from the bottom to the surface.

All information was recorded in the field onto a data sheet as provided in the survey protocol with the most pertinent information (e.g., inundation, fairy shrimp presence/absence, and species identification) recorded onto a spreadsheet Survey Log (Appendix A). Data sheets were completed for every depression that met the minimum FWS inundation requirement at the time of sampling (Appendix B). Photographs of the basins sampled are attached to this report as Appendix C.

Samples were collected, when needed, using the aquarium net and a 40 milliliter glass vial. Specimens were stored in the vial with water collected from where the specimen was found. Specimens were taken to the laboratory within 24 hours of collection and placed in a 90 percent ethyl alcohol solution for preservation. Each specimen was inspected thoroughly using a dissecting microscope. Eriksen and Belk (1999) was used to determine the species of each specimen collected.

SURVEY RESULTS

Basin Descriptions

A total of 54 depressions were identified as suitable habitat for vernal pool branchiopods and sampled during the 2011/2012 wet survey season. The majority of depressions sampled were distributed randomly (i.e., not clustered in a particular area) in and adjacent to the existing railway right-of-way. The locations of the depressions are depicted in Figure 3A to Figure 3I. The depressions detected on site were either: (1) road ruts: depressions that are typically formed by vehicular traffic within or immediately adjacent to roadways, generally lack aquatic vegetation, and are heavily disturbed by vehicular traffic; or (2) ephemeral basins: surface depressions that retain sufficient water level, support aquatic vegetation, and generally lack vehicle disturbance. Of the 54 depressions sampled, 32 were considered road ruts and 22 were considered ephemeral basins.

Fairy Shrimp Presence/Absence

Nine of the 54 depressions sampled in the survey area were found to be occupied by vernal pool branchiopods. San Diego fairy shrimp were found in one depression (Pool BB, see Figure 3H). All other fairy shrimps found on site were identified as versatile fairy shrimp. Depressions with versatile fairy shrimp include depressions: G, H, J, K, XX, ZZ, FFF, and GGG. A summary of the survey results is provided below in Table 2 and the full Survey Log is included in this report (Appendix A).

Table 2
2011/12 Vernal Pool Branchiopods Survey Results

Basin ID.	Branchiopod Species Observed
AA	None
BB	Fairy Shrimp Present; <i>Branchinecta sandiegoensis</i> . Magnitude of individuals = 2 males.
CC	None
DD	None
EE	None

Table 2
2011/12 Vernal Pool Branchiopods Survey Results

Basin ID.	Branchiopod Species Observed
FF	None
GG	None
HH	None
II	None
JJ	None
KK	None
LL	None
MM	None
NN	None
OO	None
PP	None
QQ	None
RR	None
SS	None
TT	None
UU	None
VV	None
WW	None
XX	Fairy Shrimp Present; <i>Branchinecta lindahli</i> . Magnitude of individuals = 100's
YY	None
ZZ	Fairy Shrimp Present; <i>Branchinecta lindahli</i> . Magnitude of individuals = 100's
A	None
B	None
C	None
D	None
E	None
F	None
G	Fairy Shrimp Present; <i>Branchinecta lindahli</i> . Magnitude of individuals = 10's
H	Fairy Shrimp Present; <i>Branchinecta lindahli</i> . Magnitude of individuals = 100's
I	None
J	Fairy Shrimp Present; <i>Branchinecta lindahli</i> . Magnitude of individuals = 100's
K	Fairy Shrimp Present; <i>Branchinecta lindahli</i> . Magnitude of individuals = 100's
L	None
M	None
N	None
O	None
P	None
AAA	None

Recovery Permit Coordinator

Subject: 2012 Wet Season Presence/Absence Survey for Vernal Pool Branchiopods, Mid-Coast
Corridor Transit Project, County of San Diego, California

Table 2
2011/12 Vernal Pool Branchiopods Survey Results

Basin ID.	Branchiopod Species Observed
BBB	None
CCC	None
DDD	None
EEE	None
FFF	Fairy Shrimp Present; <i>Branchinecta lindahli</i> . Magnitude of individuals = 100's
GGG	Fairy Shrimp Present; <i>Branchinecta lindahli</i> . Magnitude of individuals = 10's
HHH	None
III	None
JJJ	None
KKK	None
LLL	None

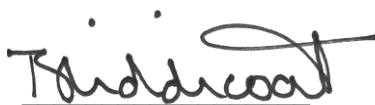
All required data collection information per the survey guidelines (FWS, 1996) was recorded and is included as Appendices A through C of this report.

I certify that the information presented in this survey report and attached exhibits fully and accurately represents my work. Please feel free to contact Kam Muri or Paul Lemons at 760.942.5147 if you have any questions regarding the contents of this report.

Sincerely,



Paul Lemons
TE051248



Thomas Liddicoat
TE139634

Att: Figure 1, Regional Map
Figure 2, Vicinity Map
Figure 3A, Survey Area Index
Figures 3B–3I, Basin Locations
Appendix A – Survey Log
Appendix B – Survey Data Forms
Appendix C – Photo Exhibits

cc: Kamarul Muri, Dudek

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- Weather Underground, Inc. 2011-2012. Weather Station KCASANDI106. Data accessed periodically from November 2011 through July 2012. Accessed website at: <http://wunderground.com>.

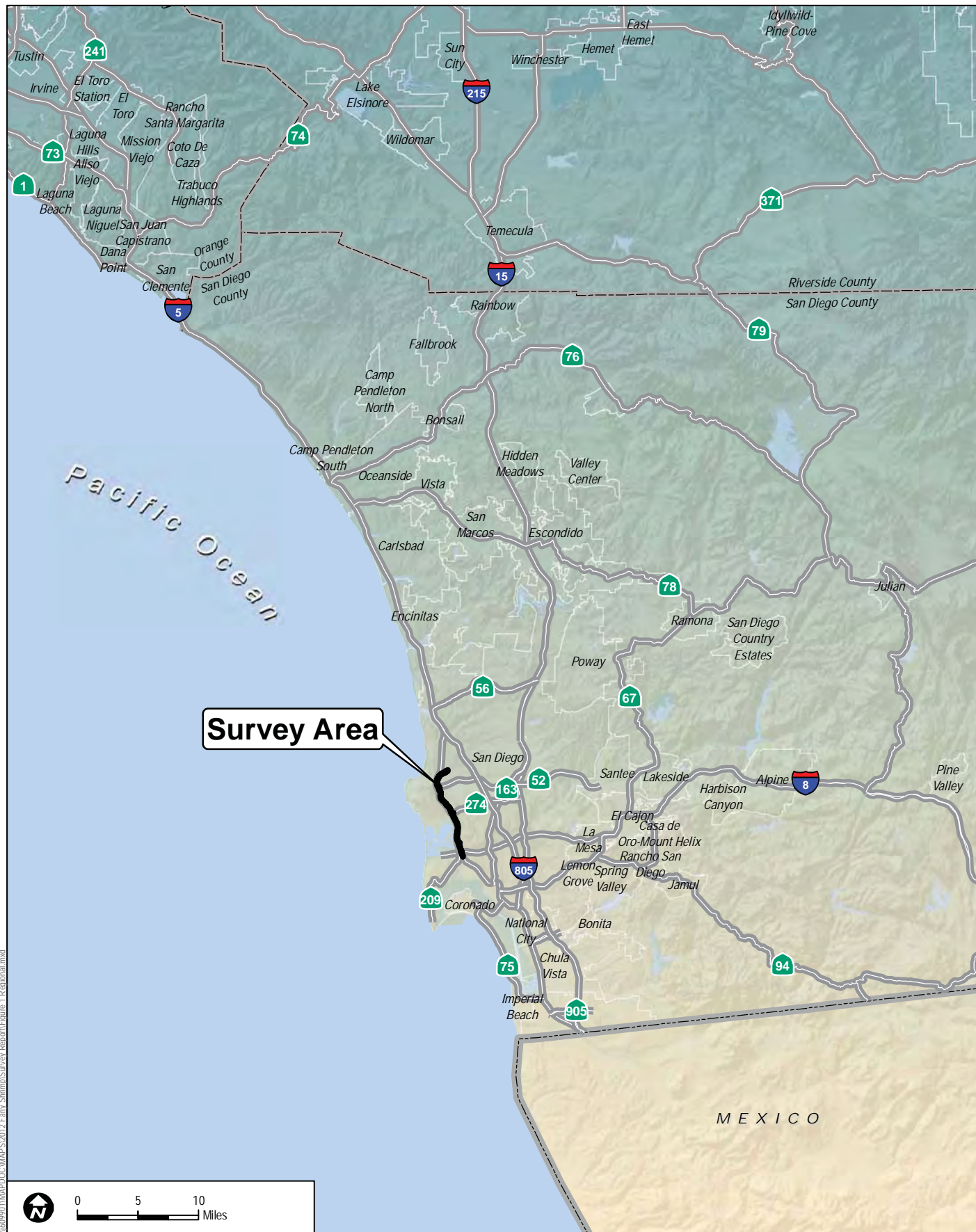


FIGURE 1
Regional Map

DUDEK

6099-3-3
OCTOBER 2012

2012 Wet Season Presence/Absence Survey for Vernal Pool Branchiopods
Mid-Coast Corridor Transit Project, San Diego County California

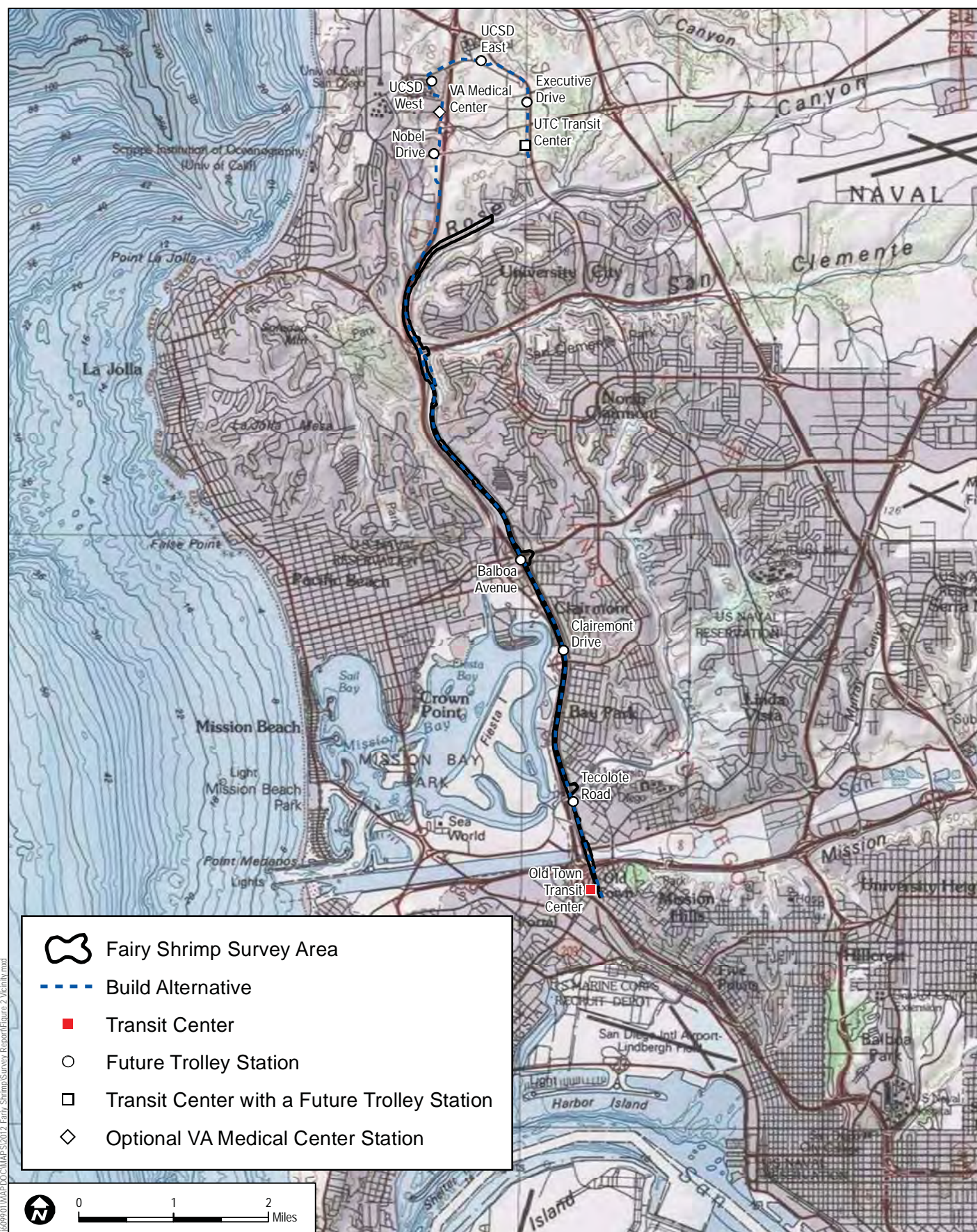




FIGURE 3A

Fairy Shrimp Survey - Index Map

DUDEK

6099-3-3

SEPTEMBER 2012

SOURCE: Digital Globe 2008.

2012 Wet Season Presence/Absence Survey for Vernal Pool Branchiopods
Mid-Coast Corridor Transit Project, San Diego County California

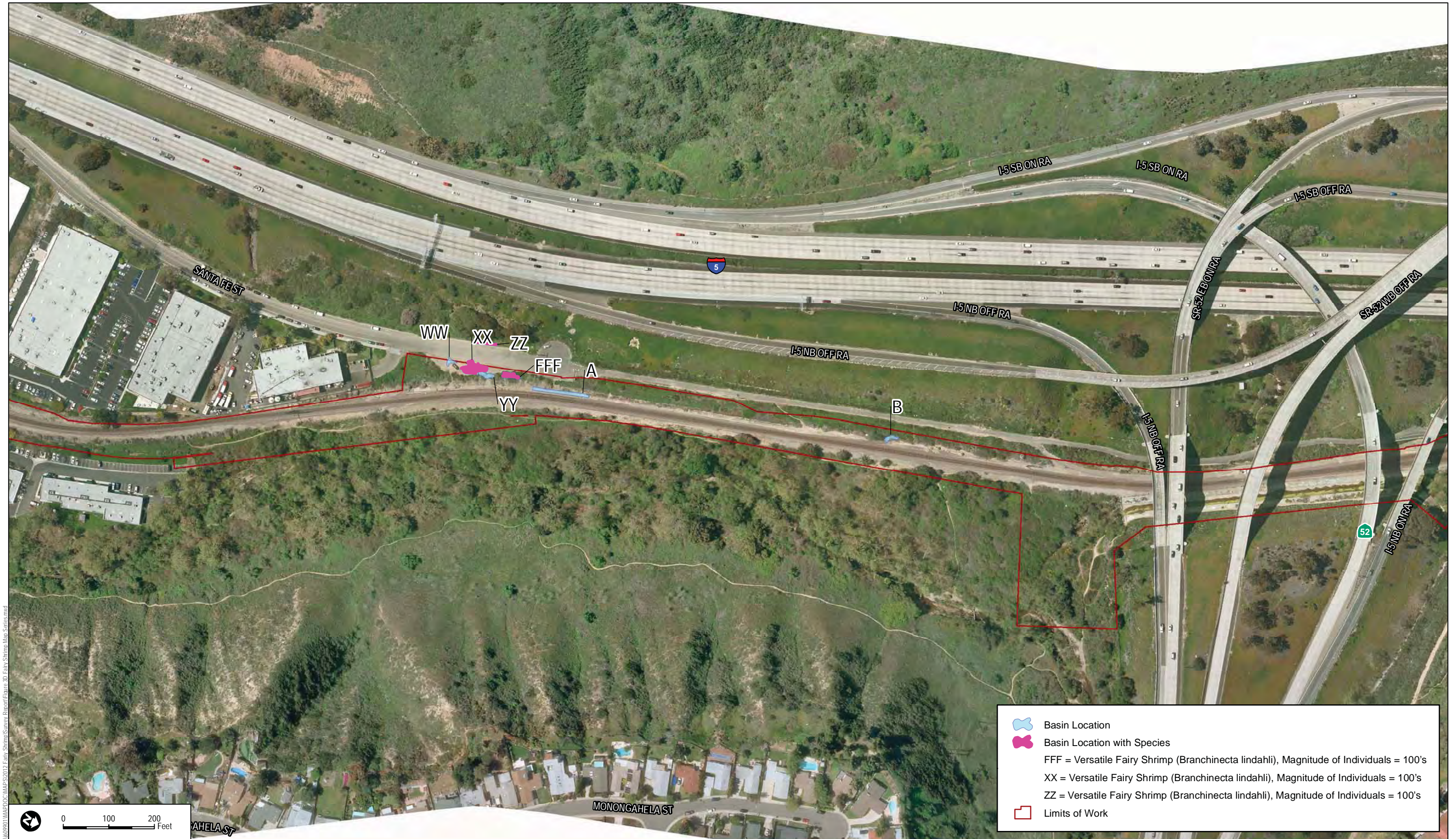



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\\HTR-DATA\GIS\data\Projects\609901\MAPDOC\MAPS\2017\Fairy Shrimp Survey Report\Figure 3C Fairy Shrimp Map Series.mxd

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 Basin Location

 Basin Location with Species


FFF = Versatile Fairy Shrimp (*Branchinecta lindahl*i), Magnitude of Individuals = 100's

XX = Versatile Fairy Shrimp (*Branchinecta lindahl*i), Magnitude of Individuals = 100's

ZZ = Versatile Fairy Shrimp (*Branchinecta lindahl*i), Magnitude of Individuals = 100's

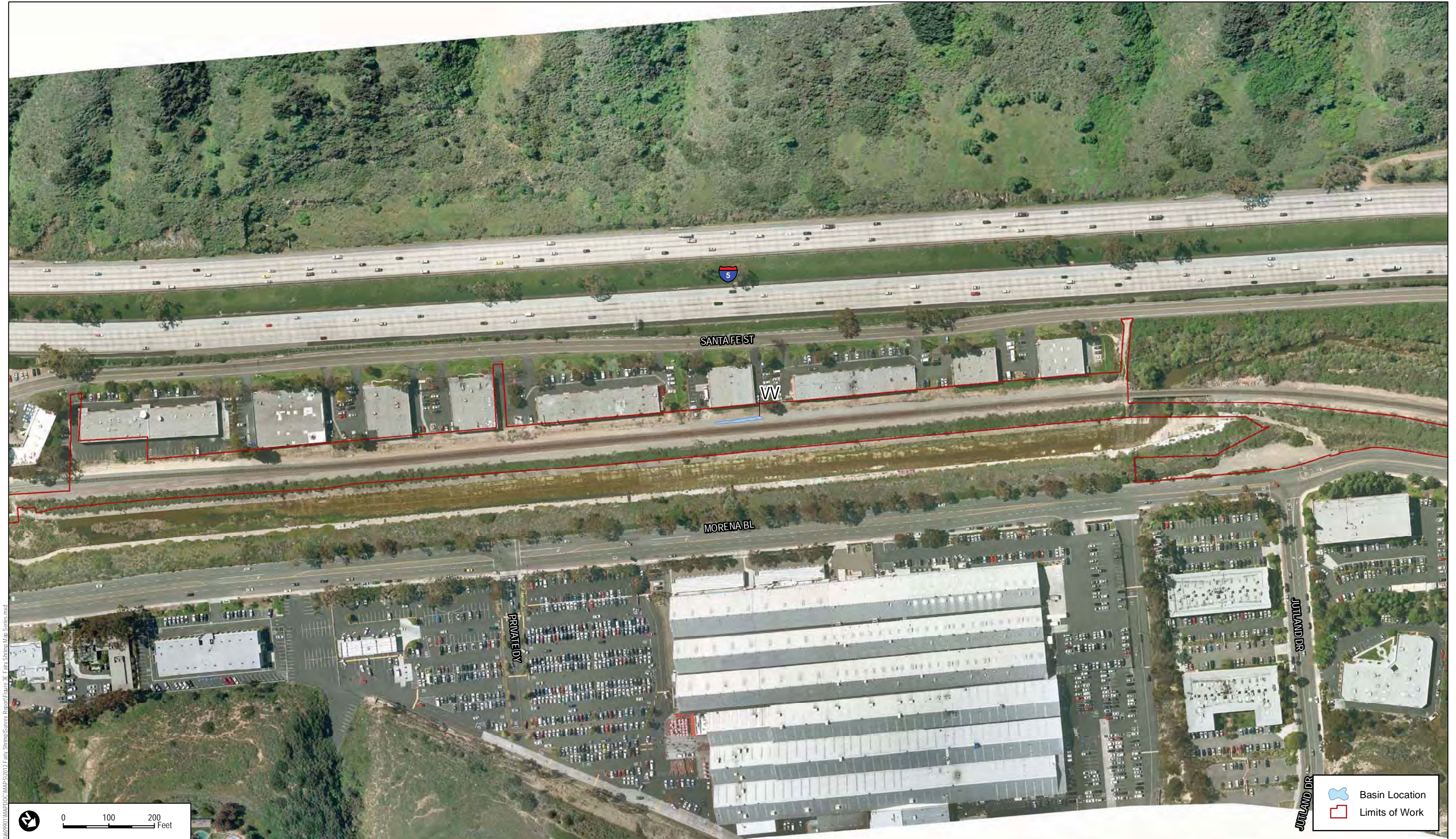
 Limits of Work

\\HTR-DATA\GIS\data\Projects\609901\MapDocs\MapSeries\2012\Fairy Shrimp Survey Report\Figure 3D Fairy Shrimp Map Series.mxd




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H:\OTR\DATA\GIS\MapSeries\609901\MAPDOC\MAP Series\2012 Fairy Shrimp Survey Report\Figure 3E Fairy Shrimp Map Series.mxd



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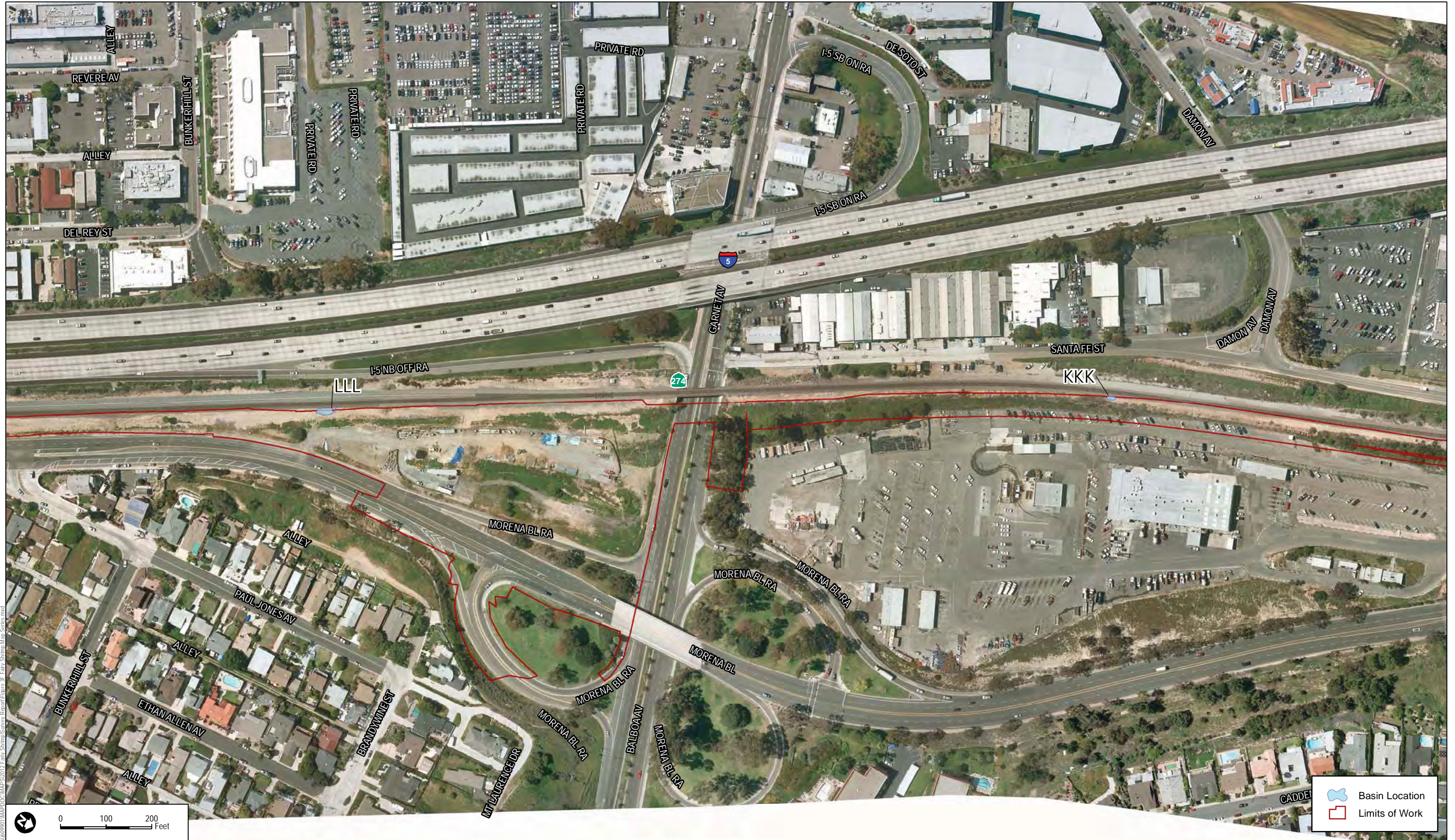


FIGURE 3F
Fairy Shrimp Basins Map Book

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H:\TR\DATA\GIS\Map\609901\MAP\DOC\MAP\S017_Fairy Shrimp Survey Report\Figure 3G Fairy Shrimp Map Series.mxd

FIGURE 3G
Fairy Shrimp Basins Map Book

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H:\OTR\DATA\GIS\MapSeries\609901\MAPDOC\MAPS\2012\Fairy Shrimp Survey Report\Figure 31 Fairy Shrimp Map Series.mxd

SOURCE: SanGIS 2012; UCSD 2010.

2012 Wet Season Presence/Absence Survey for Vernal Pool Branchiopods
Mid-Coast Corridor Transit Project, San Diego County California

FIGURE 31
Fairy Shrimp Basins Map Book

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APPENDIX A

Survey Log

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Pass #	9			10			11			12		
Survey Date	2/22/2012			3/5/2012			3/16/2012			3/26/2012		
Basin ID	Wet/Dry	FS?	Notes	Wet/Dry	FS?	Notes	Wet/Dry	FS?	Notes	Wet/Dry	FS?	Notes
AA	Dry			Dry			Dry			Dry		
BB												
CC	Dry			Dry			Dry			Dry		
DD	Dry			Dry			Dry			Dry		
EE	Dry			Dry			Dry			Dry		
FF	Dry			Dry			Dry			Dry		
GG	Dry			Dry			Dry			Dry		
HH	Dry			Dry			Dry			Wet	None	
II	Dry			Dry			Dry			Dry		
JJ	Dry			Dry			Dry			Dry		
KK	Dry			Dry			Dry			Wet	None	
LL	Dry			Dry			Dry			Wet	None	
MM	Dry			Dry			Dry			Wet	None	
NN	Dry			Dry			Dry			Wet	None	
OO	Dry			Dry			Dry			Wet	None	
PP	Dry			Dry			Dry			Dry		
QQ	Dry			Dry			Dry			Dry		
RR	Dry			Dry			Dry			Dry		
SS	Dry			Dry			Dry			Dry		
TT	Dry			Dry			Dry			Dry		
UU	Dry			Dry			Dry			Wet	None	
VV	Dry			Dry			Dry			Dry		
WW	Dry			Dry			Dry			Dry		
XX	Wet	FS- B. lindahli	100's	Wet	FS- B. lindahli	10's	Wet	None		Wet	None	
YY	Dry			Dry			Dry			Dry		
ZZ	Dry			Dry			Dry			Wet	None	
A	Dry			Dry			Dry			Wet	None	
B	Dry			Dry			Dry			Dry		
C	Dry			Dry			Dry			Dry		
D	Dry			Dry			Dry			Dry		
E	Dry			Dry			Dry			Wet	None	
F	Dry			Dry			Dry			Wet	None	
G	Dry			Dry			Dry			Wet	None	
H	Dry			Dry			Dry			Wet	None	
I	Dry			Dry			Dry			Dry		
J	Dry			Dry			Dry			Wet	None	
K	Dry			Dry			Dry			Wet	None	
L	Dry			Dry			Dry			Wet	None	
M	Dry			Dry			Dry			Dry		
N	Wet	None		Wet	None		Wet	None		Wet	None	
O	Wet	None		Wet	None		Wet	None		Wet	None	
P	Wet	None		Wet	None		Wet	None		Wet	None	
AAA*	Wet	None		Dry			Dry			Wet	None	
BBB*	Dry			Dry			Dry			Wet	None	
CCC*	Dry			Dry			Dry			Dry		
DDD*	Dry			Dry			Dry			Dry		
EEE*	Dry			Dry			Dry			Dry		
FFF*	Wet	FS- B. lindahli	100's	Wet	FS- B. lindahli	10's	Wet	None		Wet	None	
GGG*	Dry			Dry			Dry			Dry		
HHH*	Wet	None		Wet	None		Wet	None		Wet	None	
III*	Wet	None		Wet	None		Wet	None		Wet	None	
JJJ*	Wet	None		Wet	None		Wet	None		Wet	None	
KKK*	Dry			Dry			Dry			Dry		
LLL*	Dry			Dry			Dry			Dry		

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Pass #	13			14			15			16		
Survey Date	4/3/2012			4/20/2012			5/2/2012			5/16/2012		
Basin ID	Wet/Dry	FS?	Notes	Wet/Dry	FS?	Notes	Wet/Dry	FS?	Notes	Wet/Dry	FS?	Notes
AA	Dry			Dry			Dry			Dry		
BB												
CC	Dry			Dry			Dry			Dry		
DD	Dry			Dry			Dry			Dry		
EE	Dry			Dry			Dry			Dry		
FF	Dry			Dry			Dry			Dry		
GG	Dry			Dry			Dry			Dry		
HH	Dry			Dry			Dry			Dry		
II	Dry			Dry			Dry			Dry		
JJ	Dry			Dry			Dry			Dry		
KK	Dry			Dry			Dry			Dry		
LL	Dry			Dry			Dry			Dry		
MM	Dry			Dry			Dry			Dry		
NN	Dry			Dry			Dry			Dry		
OO	Dry			Dry			Dry			Dry		
PP	Wet	None		Wet	None		Wet	None		Wet	None	
QQ	Wet	None		Wet	None		Wet	None		Wet	None	
RR	Dry			Dry			Dry			Dry		
SS	Dry			Dry			Dry			Dry		
TT	Dry			Dry			Dry			Dry		
UU	Dry			Dry			Dry			Dry		
VV	Dry			Dry			Dry			Dry		
WW	Dry			Dry			Dry			Dry		
XX	Wet	FS- B. lindahli	100s	Wet	None		Wet	None		Dry		
YY	Dry			Dry			Dry			Dry		
ZZ	Dry			Dry			Dry			Dry		
A	Dry			Dry			Dry			Dry		
B	Dry			Dry			Dry			Dry		
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D	Dry			Dry			Dry			Dry		
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F	Dry			Dry			Dry			Dry		
G	Dry			Dry			Dry			Dry		
H	Dry			Dry			Dry			Dry		
I	Dry			Dry			Dry			Dry		
J	Dry			Dry			Dry			Dry		
K	Dry			Dry			Dry			Dry		
L	Dry			Dry			Dry			Dry		
M	Dry			Dry			Dry			Dry		
N	Dry			Wet	None		Wet	None		Dry		
O	Dry			Wet	None		Wet	None		120 days		
P	Wet	None		Wet	None		Wet	None		120 days		
AAA*	Dry			Dry			Dry			Dry		
BBB*	Dry			Dry			Dry			Dry		
CCC*	Dry			Dry			Dry			Dry		
DDD*	Dry			Dry			Dry			Dry		
EEE*	Dry			Dry			Dry			Dry		
FFF*	Wet	None		Wet	None		Wet	None		Dry		
GGG*	Dry			Dry			Dry			Dry		
HHH*	Wet	None		Wet	None		Wet	None		Dry		
III*	Wet	None		Wet	None		Wet	None		Wet	None	
JJJ*	Wet	None		Wet	None		Wet	None		Dry		
KKK*	Dry			Dry			Dry			Dry		
LLL*	Dry			Dry			Dry			Dry		

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Pass #	17			18			19			20			21		
Survey Date:	5/30/2012			6/12/2012			6/26/2012			7/9/2012			7/23/2012		
Basin ID	Wet/Dry	FS?	Notes	Wet/Dry	FS?	Notes	Wet/Dry	FS?	Notes	Wet/Dry	FS?	Notes	Wet/Dry	FS?	Notes
AA	Dry			Dry			Dry			Dry			Dry		
BB															
CC	Dry			Dry			Dry			Dry			Dry		
DD	Dry			Dry			Dry			Dry			Dry		
EE	Dry			Dry			Dry			Dry			Dry		
FF	Dry			Dry			Dry			Dry			Dry		
GG	Dry			Dry			Dry			Dry			Dry		
HH	Dry			Dry			Dry			Dry			Dry		
II	Dry			Dry			Dry			Dry			Dry		
JJ	Dry			Dry			Dry			Dry			Dry		
KK	Dry			Dry			Dry			Dry			Dry		
LL	Dry			Dry			Dry			Dry			Dry		
MM	Dry			Dry			Dry			Dry			Dry		
NN	Dry			Dry			Dry			Dry			Dry		
OO	Dry			Dry			Dry			Dry			Dry		
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QQ	Wet	None		Wet	None		Wet	None		Wet	None		Wet	None	
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TT	Dry			Dry			Dry			Dry			Dry		
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H	Dry			Dry			Dry			Dry			Dry		
I	Dry			Dry			Dry			Dry			Dry		
J	Dry			Dry			Dry			Dry			Dry		
K	Dry			Dry			Dry			Dry			Dry		
L	Dry			Dry			Dry			Dry			Dry		
M	Dry			Dry			Dry			Dry			Dry		
N	Dry			Dry			Dry			Dry			Dry		
O	120 days			120 days			120 days			120 days			120 days		
P	120 days			120 days			120 days			120 days			120 days		
AAA*	Dry			Dry			Dry			Dry			Dry		
BBB*	Dry			Dry			Dry			Dry			Dry		
CCC*	Dry			Dry			Dry			Dry			Dry		
DDD*	Dry			Dry			Dry			Dry			Dry		
EEE*	Dry			Dry			Dry			Dry			Dry		
FFF*	Dry			Dry			Dry			Dry			Dry		
GGG*	Dry			Dry			Dry			Dry			Dry		
HHH*	Dry			Dry			Dry			Dry			Dry		
III	120 days			120 days			120 days			120 days			120 days		
JJJ*	Dry			Dry			Dry			Dry			Dry		
KKK*	Dry			Dry			Dry			Dry			Dry		
LLL*	Dry			Dry			Dry			Dry			Dry		

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APPENDIX B

Survey Data Forms

***Survey Data Forms were provided to the U.S. Fish
and Wildlife Service on October 4, 2012 and are
available upon request***

APPENDIX C

Representative Photos

APPENDIX C

Representative Photos



Pool A (basin)



Pool BB (basin)



Pools AAA and BBB (road rut)







Pool CC (basin)





APPENDIX C (Continued)

	
Pool DD (road rut)	Pool E (road rut)
	
Pool EE (road rut)	Pools CCC, DDD, and EEE (basin)

APPENDIX C (Continued)

 A photograph showing a long, narrow pool of water in a road rut. The rut is on a dirt and gravel surface, bordered by green grass on the right and a line of trees and a road in the background.	 A photograph of a small, irregularly shaped pool of water in a basin. The water is dark blue, reflecting the surrounding green vegetation and trees. The basin is surrounded by dense foliage and a dirt path.
Pool FF (road rut)	Pool G (basin)
 A photograph of a road rut filled with water, situated on a dirt road. The rut is surrounded by green bushes and a grassy area. In the background, there are hills and a road.	 A photograph of a small pool of water in a basin, surrounded by dry, brown vegetation and a dirt path. A white fence and palm trees are visible in the background.
Pool GGG (road rut)	Pool HH (basin)

APPENDIX C (Continued)

 A photograph of a small, calm body of water (Pool HHH) surrounded by dense green vegetation and tall grasses. A gravelly shoreline is visible on the left, and a bridge structure is in the background under a clear sky.	 A photograph showing a large, white pipe supported by wooden pilings over a body of water (Pool III). The foreground is covered in reddish-brown gravel, and there is some green vegetation on the left bank.
Pool HHH (basin)	Pool III (basin)
 A photograph of a dirt road with a rut containing a small pool of water (Pool J). The road is flanked by dry brush and green vegetation, with hills in the background under a cloudy sky.	 A photograph of a large, white pipe supported by a series of wooden pilings over a body of water (Pool JJJ). The foreground is a mix of gravel and dirt, and there is some vegetation on the left bank.
Pool J (road rut)	Pool JJJ (basin)

APPENDIX C (Continued)

	
Pool L (road rut)	Pool LL (road rut)
	
Pool MM (road rut)	Pool NN (basin)

APPENDIX C (Continued)

	
Pool O (basin)	Pool OO (basin)
	
Pool P (basin)	Pool PP (basin)

APPENDIX C (Continued)

	
Pool QQ (basin)	Pool XX (road rut)
	
Pool YY (road rut)	Pool ZZ (road rut)



MID-COAST CORRIDOR
TRANSIT PROJECT

Appendix C USFWS Notification Correspondence

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From: [Paul Lemons](#)
To: [Kamarul Johari Muri](#)
Subject: FW: Notification of presence of San Diego fairy shrimp- Mid-Coast Corridor Transit Project
Date: Friday, March 28, 2014 9:45:36 AM

From: Paul Lemons
Sent: Tuesday, March 18, 2014 8:10 AM
To: stacey_love@fws.gov
Subject: Notification of presence of San Diego fairy shrimp- Mid-Coast Corridor Transit Project

Dear Recovery Permit Coordinator,

In accordance with the April 19, 1996, *Interim Survey Guideline to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods*, this email serves as notification of presence of San Diego fairy shrimp (*Branchinecta sandiegoensis*) within one inundated basin (Pool ii) at the Mid-Coast Corridor Transit Project.

Four voucher specimens (3 males and 1 female) were collected on March 10, 2014 (within 10 days of this email) and positively identified as San Diego fairy shrimp. These four individuals will be properly accessioned with the Natural History Museum of Los Angeles County.

If you require any additional information regarding this notification, please contact me at 760-479-4238 or plemons@dudek.com.

Thank you,

Paul Lemons
Wildlife Biologist
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Encinitas, CA 92024
T: 760.479.4238
F: 760.632.8710
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